Snell Advanced Media

Installation and User Guide

Fileflow

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Conventions Used

Text

<Text>	indicates a specific key press on the QWERTY keyboard.
NN/nn	indicates a value entered on a numeric keypad.
Text/text	indicates either an application menu function or a Windows/SAM installation/system setting.

Symbols

See: Reference to items in other documents.

Notes: System, software and workflow points to consider and remember.

Tips: Useful hints and advice when undertaking tasks.

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1. Overview

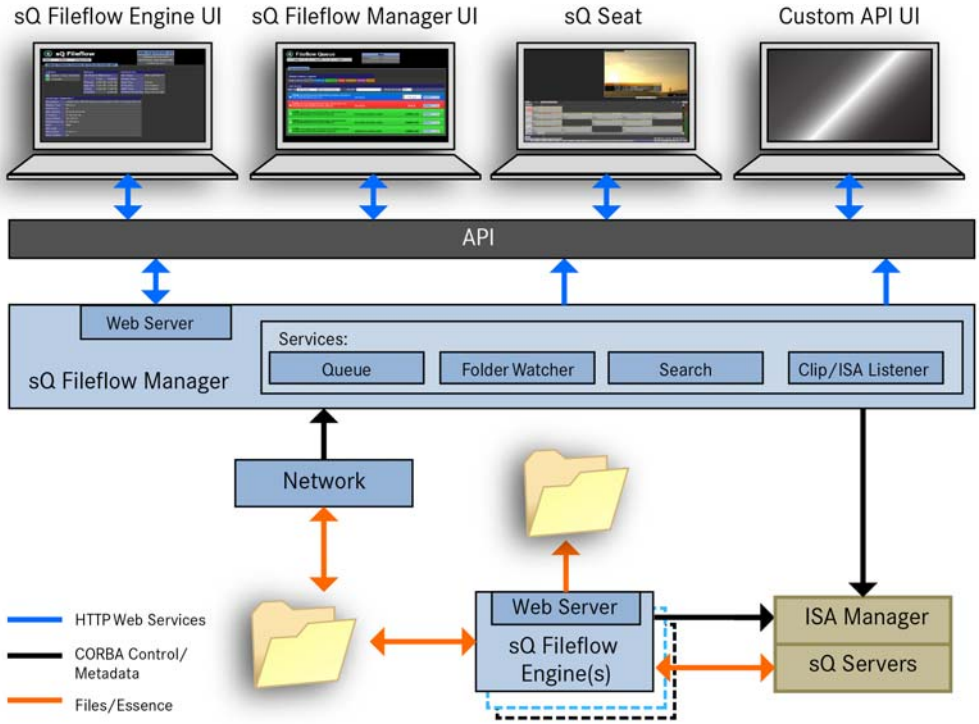
1.1 Introduction

sQ Fileflow is a workflow application designed to transfer media files between Enterprise sQ systems and IT-based workflows. It is a 'mid-tier' SOA Service Oriented Architecture (SOA) component making its functionality available via Web Services.

It consists of two parts:

Fileflow Manager (FFM)	A manager application that schedules and monitors file import and export jobs. As well as managing the job queue, FFM is also used for managing configurations (profiles/presets) and providing a UI for manually scheduling jobs.
Fileflow Engine (FFE)	An application that copies the media.

Additional Engines can be added to enable multiple import/export jobs to be processed at the same time, and additional system-level resilience is available via clustering and control workflows.



The previous diagram shows a typical sQ Fileflow system and how the components connect to the media in Enterprise sQ and network folders.

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1.1.1 Supported Formats

sQ Fileflow supports all the existing Enterprise sQ I-frame media formats including:

- AVC-Intra
- DVCPRO HD
- IMX
- DVCPRO
- DVCAM
- QXAVC

It can ingest, transcode and export long GOP camera files. Currently, Fileflow supports:

- XDCAM HD in 25 Mbit, 35 Mbit, HD422 (50 Mbit)
- XAVC HD, 2K, UHD1 up to 100 Mbit and 4K up to 300 Mbit
- XAVC-Intra HD (Class 50, 100) and 2K (Class 100) supported up to 220 Mbit; UHD and 4K (Class 300,480) up to 960 Mbit
- XAVC long-GOP HD (25, 35, 50 Mbps) and UHD up to 300 Mbit
- XAVC-S HD/2K/UHD/4K (**MP4**)
- Panasonic AVC-Ultra 2K 4:2:2 up to 200 Mbit and UHD, 4K 4:2:2 up to 400 Mbit (**OP-1b MXF**)
- Panasonic AVC-LongG HD (G6, G12, G25, G50) (**OP-1b MXF**)
- DNxHD (SMPTE VC-3) 145 and 220x
- GoPro (**MP4**)

Ingested files (excluding those in **bold**) must be wrapped as MXF OP-1a, exported files are also wrapped as MXF OP-1a.

SD	**HD**
DVCAM (25 Mbit)	DVCPro HD 720p and 1080i (100 Mbit)
IMX (30, 40, 50 Mbit)	MPEG-2 720p and 1080i (25, 35, 50 Mbit)
DVCPro (25, 50 Mbit)	AVC-Intra 720p, 1080i (50, 100 Mbit), 1080p (100, 200 Mbit)
	XAVC-Intra HD 1080i (50, 100 Mbit), 1080p (200 Mbit)

1.1.1.1 Interface

The sQ Fileflow's user interface are web pages which may be viewed in modern, standards-based web browsers or on the seats in the web tools menu (if enabled), all without the need for special Firewall configurations.

The HTTP-based API is also available for Enterprise sQ customers to create their own client applications and control workflows.

1.1.1.2 Workflows

Import and exports can be triggered in the following ways:

- Based on import Watch Folders.
- Keyword triggered exports.
- Driven manually via the Queue interface.
- Controlled via the API by an external application.

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1.1.2 The Fileflow Manager

The Fileflow Manager runs number software modules that provide services used by other parts of the system.

1.1.2.1 Fileflow Queue

The sQ Fileflow Queue is a Java-based web application which maintains a database of jobs which is accessed by web clients through a RESTful API. The queue may be installed on a single server or on a resilient cluster.

1.1.2.2 Search

While not strictly part of Fileflow, the Search Service allows the user to search the ISA from the Fileflow Manager UI to find and select clips for export through Fileflow.

1.1.2.3 Clip/ISA Listener

The Clip/ISA Listener monitors the ISA for the creation or modification of ISA clips that could trigger transfer and transcode jobs, if certain keyword or category criteria are met. It is also possible to rename files and specify engine settings on export.

1.1.2.4 Folder Watcher

The Folder Watcher monitors folders, either on the local PC, or more conventionally on the network (LAN) for the arrival of new files. The arrival of new MXF files in that folder triggers an ingest. It is also possible to rename files and specify engine settings on ingest.

1.1.3 Fileflow Engine(s)

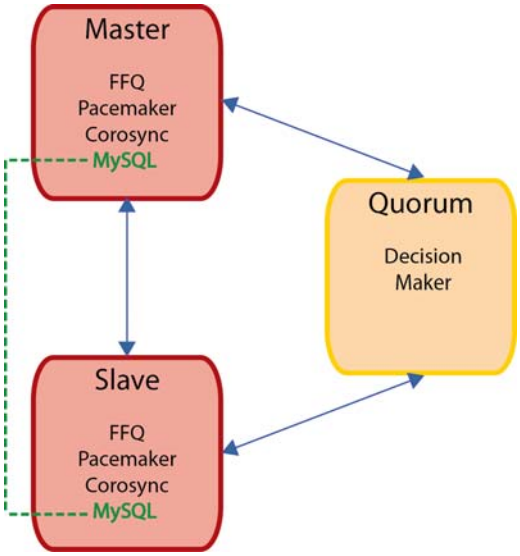
The sQ Fileflow Engine is the main essence processing application. A single instance runs on a customer supplied multi-core PC. Additional sQ Fileflow Engine computers can be added to enable multiple jobs to be processed at the same time and provide N+1 scalability and redundancy. Please see later in this document for the PC specification required to run the engine.

1.1.4 Fileflow Queue Resilient Option

The Fileflow Queue Resilient option uses a Quorum style cluster to provide customers with a FFQ implementation that is resilient to the failure of a physical machine or network connection.

The cluster is built from three units: a Master, a Slave and Quorum node.

The cluster is built upon three additional open source applications: Corosync, Pacemaker and DRDB. These are only used in the cluster.



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1.1.4.1 Corosync

Corosync provides management and notification of quorum membership i.e. it can recognise when machines join or leave the cluster. For more information go to:

http://en.wikipedia.org/wiki/Corosync_(project)

1.1.4.2 Pacemaker

The Pacemaker software decides the policy; it manages the cluster resources and decides which device (the Master or the Slave) should be primary, and when to failover. For more information go to:

http://clusterlabs.org/doc/en-US/Pacemaker/1.0/html/Pacemaker_Explained/index.html

1.1.4.3 DRBD

DRDB is used to synchronise the state of the MySQL instances on the Master and Slave machines across the network. For more information go to:

http://drdb.org/users-guide-8.3/

1.1.5 Supported Video Compressions

Source and destination frame rate, regardless of ingest or export must match.

Format	Bit Rate (Mbit/s)	Frame Rate	Frame Size	Import/Export
AVC-Intra Class 50	25	25/29.97	720p	I
	50	25/29.97	1080i	I/E
		25/29.97	1080i	I
		50/59.94	720p	I/E
	100	50/59.94	1080p	I/E
AVC-Intra Class 100	50	25/29.97	720p	I/E
	100	50/59.94	720p	I/E
		25/29.97	1080i	I/E
		25/29.97	1080p	I
	200	50/59.94	1080p	I/E
AVC-LongG	6/12	25/29.97	1080i	I
		50/59.94	720p/1080p	I
	25/50	25/29.97	1080i	I
		50/59.94	720p/1080p	I
AVC-Ultra	220	25/29.97/50/59.94	2K	I
	440	25/29.97/50/59.94	UHD/4K	I
DNxHD (VC-3)	120	25	1080i/1080p	I
	145	29.97	1080i/1080p	I
	185	25	1080i/1080p	I
	220	29.97	1080i/1080p	I
DV (DVCAM)	25	25/29.97	PAL/NTSC	I/E
DVCPRO	25	25/29.97	PAL/NTSC	I/E
	50	25/29.97	PAL/NTSC	I/E
	100	50/59.94	720p	I/E
		25/29.97	1080i	I/E
GoPro	All supported	25/29.97/50/59.94	Up to 4K	I

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IMX	30	25/29.97	PAL/NTSC	I/E
	40	25/29.97	PAL/NTSC	I/E
	50	25/29.97	PAL/NTSC	I/E
XAVC Intra HD Class 50	50	25/29.97	1080i	I/E
		25/29.97	1080p	I
XAVC Intra HD Class 100	50	25/29.97	720p	I
	100	25/29.97	1080i	I/E
		25/29.97	1080p	I
		50/59.94	720p	I
	200	50/59.94	1080p	I/E
XAVC Intra 4K Class 100	100	25/29.97	2K	I
	200	50/59.94	2K	I
XAVC Intra 4K Class 300	250	25	UHD/4K	I
	300	29.97	UHD/4K	I
	500	50	UHD/4K	I
	600	59.94	UHD/4K	I
XAVC Intra 4K Class 480	400	25	UHD/4K	I
	480	29.97	UHD/4K	I
	800	50	UHD/4K	I
	960	59.94	UHD/4K	I
XAVC Long GOP HD	25/35	25/29.97	1080i/1080p	I
	50	25/29.97/50/59.94	1080i/1080p	I
XAVC Long GOP 4K	188	25/29.97	UHD	I
	300	50/59.94	UHD	I
XAVC-S	All supported	25/29.97/50/59.94	1080p/2K/4K	I
XDCAM HD	25/35	50/59.94	720p	I/E
		25/29.97	1080i	I/E
XDCAM HD422	50	50/59.94	720p	I/E
		25/29.97	1080i	I/E

Fileflow only converts between interlaced and progressive on import if the target video format is specified in the configuration. Otherwise it selects the best match from the sQ Server's allowed formats, attempting to preserve frame size and scan type ahead of compression and codec.

1.1.6 Downloading Software

sQ Fileflow software is available from the **support – downloads** page on **www.s-a-m.com**.

On the sQ Fileflow page, run the FFQSetup.exe file (i.e. the Fileflow Queue software) and the sQ Fileflow Setup.exe (i.e. the Fileflow Engine software). Then follow the on-screen installation instructions.

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1.1.7 Client Prerequisites

1.1.7.1 Web Browser Information

sQ Fileflow has no desktop, but a web interface is available for monitoring and configuration on either the local PC, or any remote PC. The web server runs on the default HTTP port 80.

On any client that requires access to the sQ Fileflow Engine or FFQ web interface, it is strongly recommended that either Mozilla Firefox or Google Chrome is used.

When using Internet Explorer 9, click the **Compatibility** button to the right of the URL bar to enable the Fileflow Queue page to display correctly.

1.1.7.2 Java Information

To ensure that all functions are available within the interface, verify that Java JRE 7U7 (or later) is installed.

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2. Fileflow Queue Installation

2.1 Installation and Set-up

Fileflow Queue (FFQ) is a Java web application designed to run in a web server; it must be installed for sQ Fileflow to function. Before installing, read the following component information, then double-click on the installer and follow the on-screen instructions.

The automated installer is only available for Windows operating system.

2.1.1 Fileflow Versions

For the Fileflow system to operate correctly, ensure that the Fileflow Engine version is compatible with the Fileflow Queue version being used with it.

Fileflow Queue Version	Fileflow Engine Version
1.4.6	V5.4 rev 1
1.4.5	V5.3 rev 14
1.4.2 / 1.4.3 / 1.4.4	V5.3 rev 3_7
1.4 / 1.4.1	V5.2 rev 6
1.3	V5.2 rev 6
1.2	V5.2 rev 4
1.1	V5.2 rev 3 / V5.1 rev 12

This manual is intended for the most recent corresponding versions of the Fileflow Queue and the Fileflow Engine. This manual is subject to change at any time.

2.1.2 Installation

The automated installer can perform a full installation (Private JRE, Jetty FFQ WAR).

The automated installer can also perform a FFQ WAR only installation. Please note, this is only for use by developers or for testing purposes.

To install the FFQ:

1. Double-click the FFQSetup icon to start the FFQ Setup Wizard.
2. Select **Run**.
3. On the Welcome page, click **Next >** to proceed to the next step.
4. On the **Select Destination Location** page, select where FFQ should be installed. Use the **Browse...** button to select a different destination folder.
5. On the **Select Components** page, select which components should be installed. Use the drop-down menu to select the type of installation, then click **Next >**.
6. Select **Full (Default)...**

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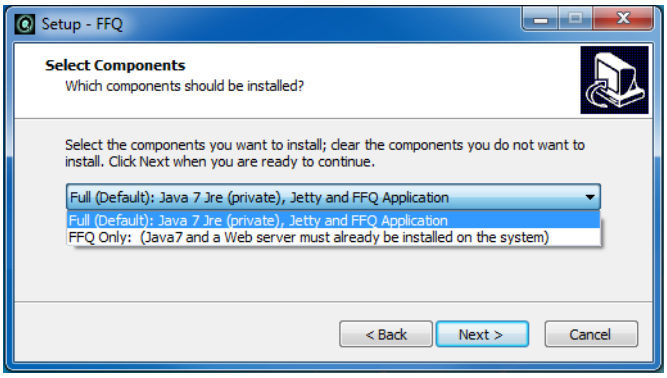
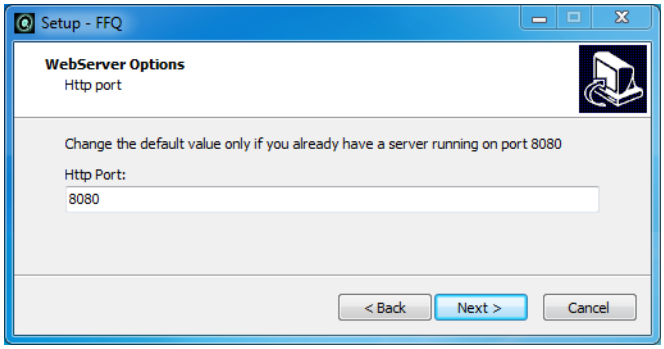
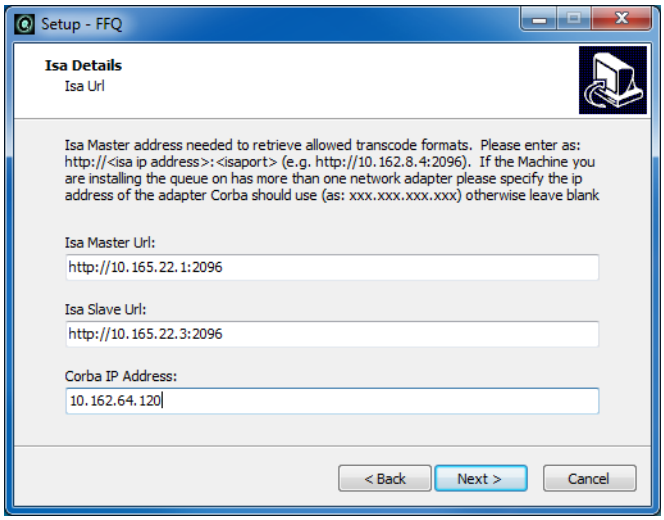


The full installation (recommended) uses a MySQL database, whereas the minimal installation uses the embedded database. Also available from the installer, or alternatively with manual configuration, FFQ can be 'pointed' to an existing MySQL installation.

7. On the **WebServer Options** page, enter the required HTTP Port. This is set to 8080 by default. This should only be changed if 8080 is already in use by another server. Click **Next >** to proceed to the next page.



8. On the **Isa Details** page, enter the URL for the ISA Master and the ISA Slave in the relevant boxes. If the FFQ PC has more than one network adapter please specify the IP address of the adapter the Corba should use in the **Corba IP Address** box, otherwise leave blank. Click **Next >** to proceed to the next page.



9. On the **Select Start Menu Folder** page, choose the location where the program's shortcuts should be placed.

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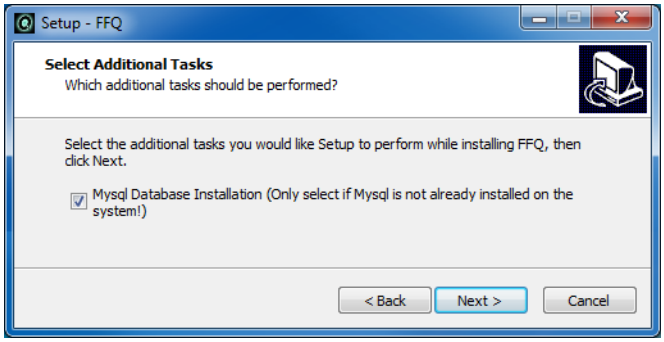
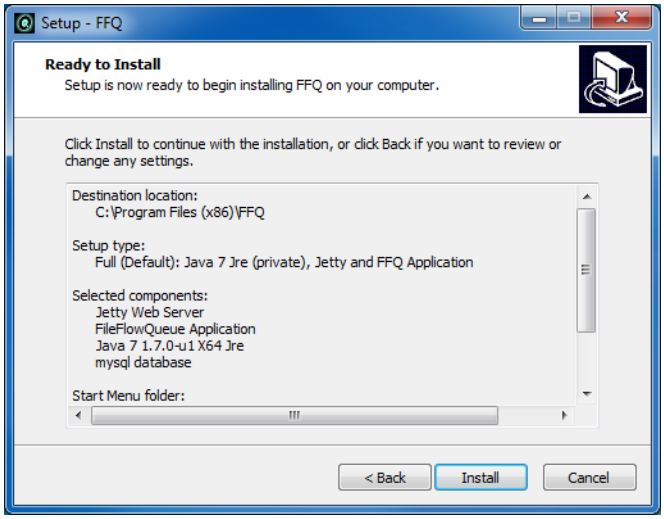
10. On the **Select Additional Tasks** page, there is an option to install a MySQL database. If selected, MySQL is installed inside the FFQ application folder. The installer registers it as a 'Windows service' therefore automatically starting it after every subsequent PC restart.

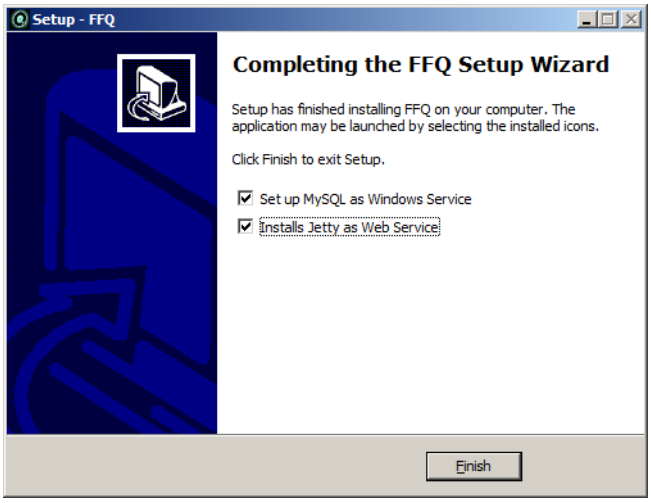


If MySQL is not selected, the FFQ automatically uses its embedded Derby database. Click **Next >** to proceed to the next page.

11. Use the Ready to Install page to review the installation summary. Click **Install** to continue with the installation when ready or **< Back** to change any of the settings.



12. When the installation is complete the Completing the FFQ Setup Wizard page displays. Ensure that both boxes are ticked. Click **Finish** to finish the installation and close the Setup Wizard. The FFQ is now installed and running.



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2.1.3 Post Installation Configuration

2.1.3.1 User Data

On systems using the MySQL database, user data is located in the FFQ installation directory.

In installations that are only used by developers or for testing, user data is located in the default location for the web server on which it was deployed (e.g. for Jetty this is under <ffqdirectory>/Jetty/FileFlowQueueDB and also Users/<user>/AppData/Local/Temp/jetty-***).

2.1.4 Settings

To fully configure the FFQ, open the **Fileflow Queue** menu in the Settings application. See “Fileflow Queue” on page 35.

2.1.5 FFQ Shortcuts

When FFQ is installed, a folder is created in the Windows **Start** menu containing several shortcuts. The shortcuts allow easy access to various configuration files, stop and start functions for the FFQ Windows service (essential for modifying or loading some settings), and the uninstall FFQ function.

2.1.6 Uninstall

To uninstall the FFQ application open the Windows **Start** and select **All Programs**. Locate the **SAM** folder and select the **FFQ** folder located within. Finally, select **Uninstall FFQ**.

Any data created after installation or that is deemed to be ‘user data’ is NOT deleted by the uninstaller. This is intentional in order to prevent accidental data loss.

2.1.7 Reinstalling

If FFQ needs to be reinstalled, there are three options:

2.1.7.1 Option 1: Clean Installation

If previous FFQ data is no longer required, this option is recommended. To reinstall FFQ without retaining any previous data or configurations:

1. Delete **C:\Program Files(x86)\FFQ**.
2. Run the installer for the new FFQ installation.

2.1.7.2 Option 2: Retain Configuration Installation

Use this option to reinstall FFQ while retaining all previous configurations. No previous data is retained in this option.

In order to retain previous FFQ configuration, backup the following files:

- C:\Program Files (x86)\FFQ\Jetty\overlays\templates\fileflowqueue=FileFlowQueue...\WEB-INF\classes\ffq\config**ui-config.xml**
- C:\Program Files (x86)\FFQ\Jetty\overlay\templates\fileflowqueue=FileFlowQueue...\WEB-INF\classes\ffq\config**config.properties**
- C:\Program Files (x86)\FFQ\Jetty\overlay\templates\fileflowqueue=FileFlowQueue...\WEB-INF\classes\ffq\config**isa_watcher_config.xml**

To retain Profiles and Presets, backup the following folder:

- **C:\Program Files (x86)\FFQ\zookeeper\data**

This should ONLY be done if upgrading to a version of the FFQ compatible with the previous one (i.e. a version with the same major and medium version indicators e.g. 1.2.123 to 1.2.456).

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After backing up the required files:

1. Delete **C:\Program Files(x86)\FFQ**.
2. Run the installer for the new FFQ installation.
3. After installation is complete, go to Windows Services and stop the FFQ service (and the FFQ zookeeper service to restore Profiles and Presets).
4. Copy the backed-up files to the same location in the new FFQ installation.
5. Restart the FFQ Windows service.

2.1.7.3 Option 3: Minimum Loss Installation

Use this option to reinstall FFQ and retain all data and configuration.

This installation option is only possible if the new FFQ installation is database compatible with the previous one.

This method of installation should only be selected when upgrading to a version of the FFQ compatible with the previous one. Compatible versions can be identified by matching major and medium version indicators, e.g. 1.2.123 and 1.2.456.

In order to retain the current configuration, backup the following folder:

- **C:\Program Files(x86)\FFQ**.

After backing up the required files:

1. Delete **C:\Program Files(x86)\FFQ**.
2. Run the installer for the new FFQ installation.
3. After installation is complete, go to Windows Services and stop the FFQ service, the FFQ zookeeper service and the MySQL service.
4. Copy the backed-up FFQ folder to **C:\Program Files (x86)\FFQ**.
5. Restart the Windows Services in the following order: MySQL service, FFQ Zookeeper service and FFQ service.

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2.2 Configuration

2.2.1 Overview

The FFQ configuration files are:

- **config.properties**
- **isa_watcher_config.xml**
- **ui-config.xml**

These files are found in the following location:

C:\Program Files (x86)\FFQ\Jetty\overlays\templates\fileflowqueue=FileFlowQueue-x.x.x\WEB-INF\classes\config

If any of the files are edited, the new settings are taken by the Jetty web server upon restart of the web server itself.

2.2.2 Fileflow Engine

The Fileflow Engine contains settings for its own ISA Listener and Watch Folder. These options are deprecated and should NOT be set unless specific constraints dictate otherwise. Use the FFQ ISA Listener and Watch Folders instead.

If the engine options for ISA Listener and Watch Folders are set and the same options are also set on the FFQ, duplicate or near duplicate jobs are likely to be created. See “Fileflow Engine Installation” on page 29.

2.2.3 Config.properties

2.2.3.1 Available Configurations Options

- database.configuration=FFQ.embedded
- database.configuration=FFQ.external.mysql

The following are optional and can only be used with external databases. Their purpose is to override the equivalent settings of the **persistence.xml** without having to deal with the complexity of the **persistence** file.

- database.external.username=<username>
- database.external.password=<password>
- database.external.connection.string=jdbc:<dbspecific>://<host>:<port>/<databasename>

2.2.3.2 Enable ISA Property Watcher

The FFQ contains functionality to allow watching of clips on ISA systems. If this is enabled, the FFQ receives events from the configured ISA systems when a clip is modified. Rules can be set in the FFQ to trigger the creation of queue jobs, if properties in the modified clips match the parameters set in one or more of the rules.

To use the **ISA Property Watch**, the following property must be set to ‘true’:

- **isa.property.watcher.enabled=true**

The detailed configuration of the **Property Watcher** is set in the **isa_watcher_config.xml**.

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2.2.3.3 Avoiding Duplicated Transfers

When an area publish to multiple pools is performed on a seat, duplicate FFQ jobs are likely to be created due to the ISA sending multiple events for each clone. To avoid creating duplicate FFQ jobs, the ISA Listener can be set up to ignore clip events that include clips with the same GUID and that occur within a specified time frame of other events. Do this by setting the **isa.duplicate.delay.seconds** field in **config.properties** to a suitable interval (in seconds). For example:

- **isa.duplicate.delay.seconds=10**

If duplicates jobs still occur, increase the interval.

2.2.3.4 Retrieve Ingest Formats from ISA

The following **isa.master.server.url** and **corba.network.adapter** settings are required to ensure that the drop-down video format list for **Ingest Profiles** is correctly populated with all of the valid settings. These settings are set by the installer.

- **isa.master.server.url=http://isaipaddress:port**
- **isa.slave.server.url=http://isaipaddress:port**
- **corba.network.adapter=xxx.xxx.xxx.xxx**

The first is the IP address and port of the ISA that the FFQ retrieve the information from (via the Corba interface).

The second only needs to be set if the machine the FFQ is installed on has more than one network adapter (even a virtual one). If that is the case the **corba.network.adapter** must be set to the IP address that Corba send its notifications back to.

2.2.3.5 Enable Watch Folder Functionality

To enable Watch Folder functionality the following properties must be set.

- **Folder Poll Monitoring Flag:**
  The first property is the folder poll monitoring setting. This determines whether event Watch Folders (for local folders) or poll Watch Folders (for network shared location based folders). If using poll Watch Folders to monitor folders on the network and if those folders require special permission to access, the SMB credential must also be set up.

  watch.folders.poll.monitoring=true

  If using poll Watch Folders to monitor folders on the network and if those folders require special permission to access, the SMB credential must also be set up. See “SMB Authentication” on page 18.

- **Path Name**
  The second property can actually occur more than once. The first property is always called **watch.folders.root.1**. This points to a location, accessible to both the FFQ and the Engine(s), under which Watch Folders may be created. If only one such location is required then use this property. However if there multiple locations under which Watch Folders could be created, then proceed to create additional properties with the same basic name (**watch.folders.root.**) increasing the numeric suffix with each additional folder.

The numeric suffix must always start at ‘1’ and the numbering with each additional folder must be continuous (i.e. no missing numbers).

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The value of this property is composed of a user-selected ‘display name’ and the path to the location. The display name and the path are separated by a semi-colon(;). For example:

watch.folders.root.1=mydisplayname;\\\\host1\\share\\myfolder_root

watch.folders.root.2=name2;\\\\10.164.155.189\\other\\path\\here

The display name is used to represent each folder root in the pop-up window where new Watch Folders can be created.

The path is normally a network path. Only in special cases this may be a local path.

- If using a local folder (e.g. **c:\foldername\...**) the **watch.folders.poll.monitoring** setting MUST be set to **false**.
- If using a network location the **watch.folders.poll.monitoring** should be set to **true**.

If using back slash characters they need to be ‘escaped’ by doubling them. For example:

\\networklocation\folder becomes \\\\networklocation\\folder

- **Target Areas:**
  The third property is a comma-separated string of all of the ISA publish areas that are the target destinations to be associated with the Watch Folders.

  watch.folders.isa.targets=isa-area1,isa-area2,isa-area3,isa-area4

- **Autodeletion Flag:**
  The fourth property is optional and if present and set to **true**, it enables source media autodeletion. Source media is only deleted after successful completion and only for the Watch Folders that have **autodeletion** specifically enabled.

  enable.source.autodelete=true

2.2.3.6 File System Location Check

FFQ automatically performs a check on the export destination when creating an export preset, a Watch Folder or an export job. The FFQ checks if the specified location exists. If the location does not exist, FFQ automatically attempts to create the specified location using the permissions it has available.

To turn the automatic location check off, add the following to **config.properties**:

perform.filesystem.location.check=false

Turning the automatic location check off is NOT recommended.

2.2.4 SMB Authentication

An SMB Authentication is needed for FFQ to successfully do the following:

- Acquire special permissions to reach and monitor the Watch Folders on the network using ‘Poll’ monitoring.
- Acquire special permissions to reach the shares accessed by UI network browsing.
- Acquire special permissions to access export job destinations.

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2.2.4.1 Setting Permissions

To set up SMB authentication:

1. Ensure the **config.properties** contains the entry **network.use.smb=true**
2. Add the credentials to the **other.properties** files which are reachable via the FFQ Windows menu shortcuts.

   The actual file is created in the folder:
   FFQ\jetty\overlay\templates\fileflowqueue=FileFlowQueue-...\WEB-INF\classes\ffq\config

The file should contain the authentication details required for access. Either specify a single set of authentication details (referred to as “base” details) or specify separate authentication details for Watch Folder polling, export destination check and network map. The format is as follows:

base-domain=<domainname>
base-username=<username>
base-password=<password>

watchfolders-domain=<domainname>
watchfolders-username=<username>
watchfolders-password=<password>

networkmap-domain=<domainname>
networkmap-username=<username>
networkmap-password=<password>

exportcheck-domain=<domainname>
exportcheck-username=<username>
exportcheck-password=<password>

After specifying the authentication details, restart the FFQ Service. Upon restart the FFQ reads **other.properties**, encrypts the information and stores it elsewhere while the file named **other.properties** is then deleted.

From that point onwards the FFQ uses the provided authentication details to retrieve information on the configured shares via SMB.

2.2.4.2 Updating Permissions

If credentials need to be modified, use the shortcut to bring up **other.properties**. This creates a new empty file; **other.properties**.

Ensure that all the credentials are entered, not just those that need to be changed.

Restart the server for the new credentials to take effect.

2.2.4.3 Clearing Permissions

To erase all credentials entered in the FFQ, use the shortcut to bring up **other.properties** and edit the file so that it contains **reset=true**.

When the FFQ server is restarted, the previously entered authorisation settings are removed.

To remove all credentials from the FFQ, go to **C:\Program Files(x86\FFQ\Jetty\PersistedData** and delete the file **other.data**.

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2.2.5 Network Browsing

The mechanism used by the UI to browse files for ingest into the system is different from that used to determine destinations for ‘exports’ or destinations for ‘presets’.

- For ingest, the FFQ UI looks at files on the user’s machine (local files) or on a shared network.
- For preset and export destinations, the UI looks at a set of predefined locations visible to the FFQ Server.

These locations are configured in the **config.properties** file, under the **Export Destination Properties** section. Locate the **network.destination.roots=** line to modify or add destination folders. One or more hosts can also be specified here, each with one or more shares. All folders below the shares are visible through the UI.

The values can be specified as in the following example:

network.destination.roots=<hostname1>:<sharename1>,<sharename2>; <hostname2>:<sharename>;<hostname3>:<sharename1>,<sharename2>

As shown in the example above:

- A colon (:) separates the hostname from the list of its shares.
- The shares are separated by a comma (,).
- Each host/shares combination is separated by a semicolon (;).

Example 1

If there is more than one ‘export’ host (e.g. **\\host1\exportshare** and **\\host2\myexports**, this can be configured in the FFQ as follows:

network.destination.roots=host1:exportshare;host2:myexports

Example 2

If there are two hosts but more than one share per host (e.g. **\\host1\exportshare**, **\\host2\myexports** and **\\host2\myothershare**, this can be configured as follows:

network.destination.roots=host1:exportshare;host2:myexports, myothershare

2.2.5.1 Refresh Interval

The information on the shares is retrieved by the FFQ and cached. This is refreshed every 5 minutes (300 seconds). This interval can be changed by editing the following line:

network.update.delay.seconds=<time in seconds>

The FFQ server must be restarted for changes to take effect.

2.2.5.2 FFQ Network Map

When FFQ is first run, the system initialises the network map.

The network map must be initialised before creating an Export preset or setting an Export destination using the UI Tree.

Initialisation is normally very quick, but it can take a few minutes if the list of hosts and shares allowed is very large.

After the server has retrieved the information, it serialises it to file so that even if the server is restarted it is able to return network information from the start.

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2.2.5.3 Network permissions

Due to network permissions, in some cases the drives may not be visible to the FFQ. If that is the case the problem can be rectified by setting up SMB authentication. See “SMB Authentication” on page 18.

2.2.6 UI Configuration

From FFQ V1.4 onwards the **ui-config.xml** file is located in the following location on Windows:

On Windows
<installationDirectory>\jetty\overlay\templates\fileflowqueue=FileFlow-Queue-*\WEB-INF\classes\ffq\config.

On Linux
/opt/jetty/resources/ffq/config.

Currently there are a few parameters that are configurable. Right-click on the **ui-config.xml** file and select **Edit**.

The **ui-config.xml** looks similar to the following:

```
<settings>
   <dropdown>
      <menuitem>
         <title>Project folders example</title>
         <hostip>127.0.0.1</hostip>
         <!-- add this config element to use a different port for search -->
         <!-- port>8182</port -->
         <!-- this config element will tell FFQ if it is dealing with "searchv2",
"searchv3", "projectfolders", or "userrights".
              If omitted FFQ will assume searchV2-->
         <servicetype>projectfolders</servicetype>
      </menuitem>
      <menuitem>
         <title>PF with User Rights example</title>
         <hostip>127.0.0.1</hostip>
         <!-- add this config element to use a different port for search -->
         <!-- port>8182</port -->
         <!-- this config element will tell FFQ if it is dealing with "searchv2",
"searchv3", "projectfolders", or "userrights".
              If omitted FFQ will assume searchV2-->
         <servicetype>userrights</servicetype>
      </menuitem>
      <menuitem>
         <title>Search V3 example</title>
         <hostip>127.0.0.1</hostip>
         <!-- add this config element to use a different port for search -->
         <!-- port>8182</port -->
         <!-- this config element will tell FFQ if it is dealing with "searchv2",
"searchv3", "projectfolders", or "userrights".
              If omitted FFQ will assume searchV2-->
         <servicetype>searchv3</servicetype>
      </menuitem>
      <menuitem>
         <title>Search V2 example</title>
         <hostip>10.162.64.69</hostip>
         <!-- add this config element to use a different port for search -->
         <!-- port>8182</port -->
         <!-- this config element will tell FFQ if it is dealing with "searchv2",
"searchv3", "projectfolders", or "userrights".
              If omitted FFQ will assume searchV2-->
         <!-- servicetype>projectfolders</servicetype -->
      </menuitem>
   </dropdown>
   <default_folder>\\host\share\path</default_folder>
   <refresh_ui_seconds>20</refresh_ui_seconds>
   <refresh_progress_ui_seconds>5</refresh_progress_ui_seconds>
   <!-- a resultset_size of 0 will retrieve all results. valid values 0, 200, 500,
1000, 1500, 2000 -->
   <resultset_size>200</resultset_size>
   <!-- the number of AJAX errors allowed before flagging a problem to the user -->
   <errors_allowed>5</errors_allowed>
</settings>
```

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The following configurations can be added to the **ui-config.xml**:

- Add search hosts to the drop down list for the **Transfer from ISA** screen.

  Either Search V2 or V3 or the search service bundled in project Folders V4 can be used. By default the FFQ assumes it is pointed to a V2 search service.

  However, the **servicetype** tag can be used to specify a different set-up. The search service type tags that can be used include the following:

searchv2	The Search Service is a Web Service which provides the ability to search for clip properties over a RESTful HTTP interface. It is written in Java and deployed in the Jetty web server. Version 2 is for a single-zoned version of the Search Service.
searchv3	Version 3 of the Search Service introduces the ability to index and search multiple zones within a single web service.
projectfolders	This uses Search Service 3 with Project Folders.
userrights	This uses Search Service 3 with Project Folders and User Rights. Specifying the search service tag causes a login prompt to be displayed.

- If **searchtype** is omitted, the FFQ assumes it is using Search V2.
- The HTTP port used for each Search service can be changed.
- The default folder for the **destination** field can be changed in the **choice** screen of the **Transfer from ISA** functionality.
- Change the refresh intervals of the UI.
- Change the refresh intervals of the UI screen containing progress bars (so that the rate for these screens can be set separately).
- Change the default result set size that the UI should display in normal operation. Valid values are 0, 200, 500, 1000, 1500, 2000. If set to 0 the UI reads the full result set.
- Change the FFQ Audio default from 8 Channel to 16 Channel audio. Changing this field causes the **Audio Options** on Ingest and Export Profiles (**Admin>Profiles**) to display 16 Channel options.

  If after switching the system to 16 Channel audio the new options in the Profiles pages do no display>:

  a Refresh the browser.

  b Go to the Profiles page.

  c Right click on the Profiles “inner window” select “reload frame”.

If the system is reconfigured to use 16 Channel audio, existing ingest profiles (created with the 8 Channel audio configuration) should be deleted and re-created as they are not likely to work correctly and it may not be possible to modify them for 16 Channel operation.

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2.2.7 Isa_watcher_config.xml

The property watcher can listen to one or more ISA systems and can be configured as standalone or master/slave. For the property watcher to be enabled the **config.properties** file must be appropriately modified.

2.2.7.1 ISA Watcher Config Example (XML)

The following is a working example of the isa_watcher_config.xml:

```
<watch_config>
        <!--
            The slavemode element required only if this listener is run as a slave
        -->
        <slavemode masterurl="http://temp_uri.org"/>
        <!--
            If you have more than one network adapter (even if it is a virtual one for a Virtual Machine), then you
            have to specify the ip address which the corba listener should use to receive events on. failure to do so
            could cause Corba to choose the wrong network adapter which would result in the events not being
            received
        -->
        <corba_network_adapter ipaddress="xxx.xxx.xxx.xxx" />
        <!--
            How long (in seconds) to wait between attempts to connect to the ISA Manager.
        -->
        <connectionRetryTimeout>10</connectionRetryTimeout>
        <!--
            How often (in seconds) to expect to hear from the ISA Manager.
        -->
        <heartbeatPeriod>10</heartbeatPeriod>
        <isas>
                <isa id="isa1" url="http://masterisa:80" slaveurl="http://slaveisa:80"/>
        </isas>
        <!--
            Watched properties
        -->
        <watched>
                <watchrule target="\\my_networky\path" watchedisas="isa1">
                        <!--
                            match exactly
                        -->
                        <property name="Title" value="^FFQ-Test$" />
                </watchrule>
                <watchrule target="\\{share}\path" watchedisas="isa1">
                        <!--
                            match exactly
                        -->
                        <property name="Title" value="^abcd$" />
                        <!--
                            match beginning with
                        -->
                        <property name="Category" value="^abcd" />
                        <!--
                            match ending with
                        -->
                        <property name="Owner" value="abcd$" />
                        <!--
                            match containing
                        -->
                        <property name="Description" value="abcd" />
                </watchrule>
                <watchrule target="\\my_networky\path2" watchedisas="isa1">
                        <property name="Title" value="^2abcd$">
                                <replaceAllWith>XYZ</replaceAllWith>
                        </property>
                </watchrule>
                <watchrule target="\\my_networky\path3" watchedisas="isa1">
                        <property name="Title" value="^other$">
                                <replaceWith>XYZ</replaceWith>
                        </property>
                </watchrule>
                <watchrule target="\\my_networky\path4" watchedisas="isa1">
                        <property name="Title" value="^other$">
                                <replaceWith></replaceWith>
                        </property>
                </watchrule>
        </watched>
</watch_config>
```

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2.2.7.2 Corba_network_adapter

If there is more than one network adapter (including virtual adapters) installed on the platform running the FFQ, the IP address which the CORBA listener should use to receive events on needs to be specified. If this is not specified, CORBA could choose the wrong network adapter resulting in events not being received. This is indicated via the FFQ log messages showing the ISA heartbeat not being received and the listener attempting to reconnect to ISA, as displayed in the following example:

```
- Waiting for clip events to be added to the queue.
- The ISAManager has not sent a heartbeat for over 20 seconds. We assume that it is down.
- Triggering ISA connection failure recovery procedure....
- Notifying all listeners that the service has been disconnected from the ISA manager.
- Attempting to reconnect to the ISA....
- Queing request to connect to the ISA....
- Fetching the IOR @ http://softytestisa:80/ZoneManager.ior
- Created a Q_InternalPortal instance connected to the remote ISA Manager running at http://softytestisa:80
- Registering with the ISA @ http://softytestisa:80 for clips related events....
- Notifying listeners of connection to ISA @ http://softytestisa:80
- Connected to an ISA system
```

If the FFQ platform has only one network adapter, the above IP specification is not necessary.

2.2.7.3 ConnectionRetryTimeout

This specifies how long (in seconds) to wait between attempts to connect to the ISA Manager.

2.2.7.4 HeartbeatPeriod

This specifies how often (in seconds) the ISA Manager notifies the listener of its status.

2.2.7.5 ISA

These entries list:

ISA ID: referred to by the Watchrules
ISA master URL
ISA slave URL: (optional, but specification is recommended to avoid failures when the master ISA is unavailable)

A minimum of one ISA entry must be specified; there is no maximum limit.

An ISA ID is a general label and can be any text. For example, the zone name or number could be used.

2.2.7.6 Watchrule

The watchrule must contain a minimum of one property. When it contains multiple properties, all of the properties must be successfully matched for the rule to be applied. The watchrule specifies the following attributes:

Target:	The destination path used to create the FFQ job.
Watched ISAs:	A comma separated list of ISA IDs to which a watchrule is applied. A minimum of a single ISA ID is required.

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2.2.7.7 AND/OR Functionality

AND: Using multiple properties in a single watchrule allows multiple conditions to be specified that must be true for the match to be considered valid.

OR: To check for different conditions that should produce the same outcome, create different watchrules, but remember that if conditions in separate watchrules are met then this could result in two or more queue jobs for one event.

2.2.7.8 Property

This contains the criteria that the rule should be matched to for a list of all available properties). The name attribute must exactly match the intended property on the ISA. The value can contain a valid regex expression that is used to determine if the rule matches. The most useful match values are indicated in these examples:

value=	"**^test-string$**"	matches if the value of the property selected IS EXACTLY 'test-string'.
	"**^test-string**"	matches if the value of the property selected BEGINS WITH 'test-string'.
	"**test-string$**"	matches if the value of the property selected ENDS WITH 'test-string'.
	"**test-string**"	matches if the value of the property selected CONTAINS 'test-string' anywhere.

For date matches, there are two methods that can be used:

- The first method is a full date match to the millisecond in the following format:
  <property name="Created" value="2011-12-08T16:14:41.000Z"/>
- The second method is a match in the same format as above, but the match string starts with '^' and only extends to the level of match required (i.e. 'match any date beginning with…'). The example below matches any clip with the creation date of December 2011:
  <property name="Created" value="^2011-12"/>

Other useful matches are:

value=	"**\A\Z|\A\Z*|\A\Z+**"	matches empty string, i.e. if the value of the property selected is empty.
	"**.**"	matches anything provided the value is not empty.

2.2.7.9 ReplaceWith and ReplaceAllWith

The ISA property listener can be set to modify the clip property that it is watching if the conditions have been matched. This is done through optional elements nested below each 'property' element.

The property element can contain one of two new optional nested elements. These elements are **ReplaceWith** and **ReplaceAllWith**. Only one of these is allowed per property and each property can specify one if needed.

Using ReplaceWith/ReplaceAllWith makes the listener modify the clip properties on the ISA. The ISA then sends a 'modification notification' to all listeners including the FFQ. Ensure that rules are created so that the notification caused by the replacement is not itself captured by the same rule (or other rules) and causes an INFINITE LOOP.

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ReplaceWith

If this is specified, only the string matched for the containing property is replaced with the contents of the **ReplaceWith** element. For example:

- if property “Title” is watched for a string containing “Game”
- the clip title is “Rugby Union Game”
- the watchrule specifies < ReplaceWith>final</ ReplaceWith>
- the listener schedules a queue job and replaces the matched string in the clip property to display “Rugby Union final”.

ReplaceAllWith

If this is specified, all the property string is replaced with the contents of the **ReplaceAllWith** element (even if the original string was longer than the specified match string). For example:

- if property “Title” is watched for a string containing “Game”
- the clip title is “Rugby Union Game”
- the watchrule specifies < ReplaceAllWith>final</ ReplaceAllWith>
- the listener schedules a queue job and replaces the matched string in the clip property to display “final”.

For date properties the **ReplaceAllWith** value must be in this format:

<replaceAllWith>2011-12-08T16:14:41.000Z</replaceAllWith>

To get the time of rule match to be captured in the field, enter ‘**Now**’ for the ‘**ReplaceAllWith**’ value. In the following example the property matches the **Expiry** field empty string and replaces it with the current time:

```
<property name=“Expiry” value=“\A\Z|\A\Z*|\A\Z+”>
    <replaceAllWith>Now</replaceAllWith>
</property>
```

The current time is entered in the **Expiry** field.

Property matches and ReplaceWith/ReplaceAllWith options function on text, number and Boolean property types; they do not function on other property field types. Additionally ReplaceAllWith functions with properties of date type.

There are fields on the ISA that are NOT updatable. If a replacement rule is specified for one of these, the replacement fails for all fields of that clip (although the queue job is still created).

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2.2.7.10 Infinite Loop Example

The following example causes the listener to ‘replace all’ on the category but, as the category is ‘match any’, the notification originating from this change is caught repeatedly causing an infinite loop:

```
<watchrule target="\\from_isa1\path12" watchedisas="isa1">
  <property name="Title" value="^anyTest$">
  </property>
  <property name="Category" value=".">
    <replaceAllWith>replaced text</replaceAllWith>
  </property>
</watchrule>
```

The following shows the same rule but, as it is now matching on another field such as ‘Owner’ and actually modifying it, an infinite loop is avoided:

```
<watchrule target="\\from_isa1\path12" watchedisas="isa1">
  <property name="Title" value="^anyTest$">
  </property>
  <property name="Category" value=".">
    <replaceAllWith>replaced text</replaceAllWith>
  </property>
  <property name="Owner" value="original">
    <replaceAllWith>replaced</replaceAllWith>
  </property>
</watchrule>
```

If a partial replacement rule is set to match a string in a field and that string is present twice, only the first is matched. The property then updates and the clip is caught again by the same rule for the second match.

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2.2.7.11 Available and Alterable Properties

The following table indicates properties that can be monitored by the FFQ Property Watcher.

column name	column type	creatable	alterable* (ReplaceWith/ ReplaceAllWith)	searchable	clones
Category	text	✓	✓	✓	✓
ClipID	number	✗	✗	✓	✗
CloneID	number	✗	✗	✓	✓
CloneZone	number	✗	✗	✓	✓
Completed	date	✗	✗	✓	✗
Created	date	✗	✗	✓	✗
Description	text	✓	✓	✓	✓
Destination	number	✓	✓	✓	✓
Expiry	date	✓	✓	✓	✗
Frames	none	✗	✗	✗	✗
HasEditData	number	✗	✗	✓	✗
Inpoint	number	✓	✓	✗	✓
JobID	number	✓	✓	✓	✓
Modified	date	✗	✗	✓	✓
NumAudTracks	number	✗	✗	✓	✗
Number	number	✗	✗	✓	✗
NumVidTracks	number	✗	✗	✓	✗
Outpoint	number	✓	✓	✗	✓
Owner	text	✓	✓	✓	✓
PlaceHolder	Boolean	✗	✗	✓	✗
PlayAspect	text	✓	✗	✓	✓
PoolID	number	✗	✗	✓	✗
PublishedBy	text	✓	✓	✓	✓
Register	register	✗	✓	✓	✓
Tape	text	✓	✓	✓	✓
Template	number	✓	✓	✓	✓
Title	text	✓	✓	✓	✓
UnEdited	number	✗	✗	✓	✗
PlayMode	text	✓	✗	✗	✓
MosActive	Boolean	✓	✓	✓	✗
Division	text	✓	✓	✓	✓
VideoFormats	text	✗	✗	✓	✗
AudioFormats	text	✗	✗	✓	✗
ClipGUID	text	✓	✗	✓	✓
Protection	text	✗	✗	✗	✗
VDCPID	text	✓	✓	✓	✓

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3. Fileflow Engine Installation

3.1 Overview

Any re-configuration or amendments to the sQ Server ISA system should be done by a trained engineer or by a trained system administrator. SAM Support Engineers are available to provide technical advice and assistance via GoToAssist. If in doubt, always contact SAM 24 Hour Support before changing any setting.

It is important that Hyper-threading is turned off. This is intentional to ensure correct operation. SAM supplied PCs have Hyper-threading disabled in the PC BIOS. Customer supplied PCs must have hyper-threading disabled before using this software.

3.1.1 Fileflow Engine Functionality

The sQ Fileflow Engine is the main essence processing application; transferring jobs from the FFQ and then importing or exporting the content appropriately. A single instance runs on a customer supplied multi-core PC. Additional sQ Fileflow Engine computers can be added to enable multiple jobs to be processed at the same time and provide N+1 scalability and redundancy.

In some earlier versions, the Fileflow Engine is used instead of the FFQ to monitor a single Watch Folder for import files and an ISA metadata field to trigger output jobs.

3.1.2 Fileflow Engine Version

For the Fileflow system to operate correctly, ensure that the Fileflow Engine version is compatible with the Fileflow Queue version being used with it.

Fileflow Queue Version	Fileflow Engine Version
1.1 - 1.4	V5.3 rev 3
1.1 - 1.3	V5.2 rev 6
1.1 - 1.3	V5.2 rev 6
1.2	V5.2 rev 4
1.1	V5.1 rev 12

This manual is intended for the most recent corresponding versions of the Fileflow Queue and the Fileflow Engine. This manual is subject to change at any time.

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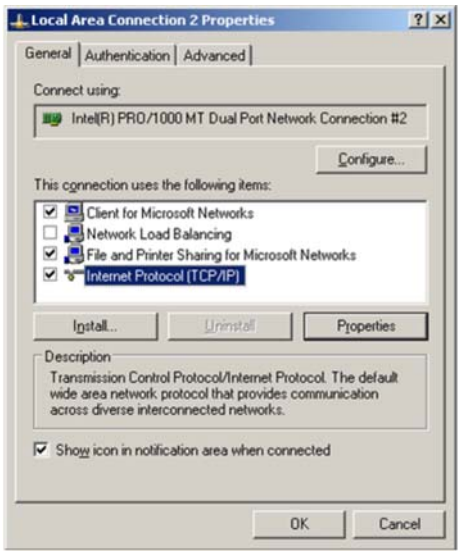
3.2 Installation and Set-up

3.2.1 LAN Connection Properties

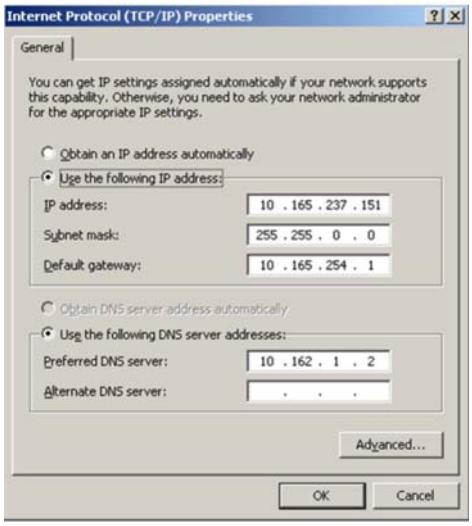
On systems with dual LAN connections, the LAN connection used by sQ Fileflow can be set from the 'Network: Clipnet' section within the 'Settings' application. See "Network: Clipnet" on page 37.

After the Fileflow has been installed on the Windows 7 PC, the next step is to set up the LAN connections used by sQ Fileflow.

1. Click on the Internet connection icon to the right of the Windows taskbar.
2. Select **Open Network and Sharing Center**.
3. Select **Local Area Connection** followed by **Properties**.
4. Select **Internet Protocol (TCP/IP)** followed by **Properties**.



5. Click **Use the following IP address**, and then, in the **IP address**, **Subnet mask**, and **Default gateway** boxes, type the IP address settings.



6. To specify a DNS server address, click **Use the following DNS server addresses**, and then, in the **Preferred DNS server** and **Alternate DNS server** boxes, type the addresses of the primary and secondary DNS servers.

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The Windows computer name is used in the 'owner' ID field as reported to the Fileflow Queue. To avoid conflicts, ensure all sQ Fileflows have unique names.

3.2.2 Network Card Drivers and Set Up

sQ Fileflow should be used with a Intel Gigabit Network Adapter. Ensure the latest Intel drivers are installed for correct operation.

1. Click the Start menu.
2. Right-click on **Computer** and choose the **Manage** option.
3. Click on **Device Manager** in the lefthand column.
4. Click on **Network adapters** in the centre column.
5. Right-click on the network adapter being used to connect to the network and choose **Properties**.
6. Click on the **Advanced** tab and look for **Jumbo Frame** in the **Settings** window.

7. Ensure that **Jumbo Frames** are enabled by using the **Value** drop-down box and selecting **9014 Bytes**.

3.2.3 SNMP

3.2.3.1 Install SNMP

The Windows SNMP service must be running for SNMP to operate. If it is not installed (the default), do the following:

1. Click the Start menu.
2. Select **Control Panel**.
3. Select **Programs and Features**.
4. Click the **Turn Windows Features on or off** option.
5. If UAC prompted, then click on **Yes**.
6. In the **Windows Features** window, scroll down and select the **Simple Network Management Protocol (SNMP)** check box and click on **OK**. Then, wait for some time to install SNMP.

DO NOT select WMI SNMP.

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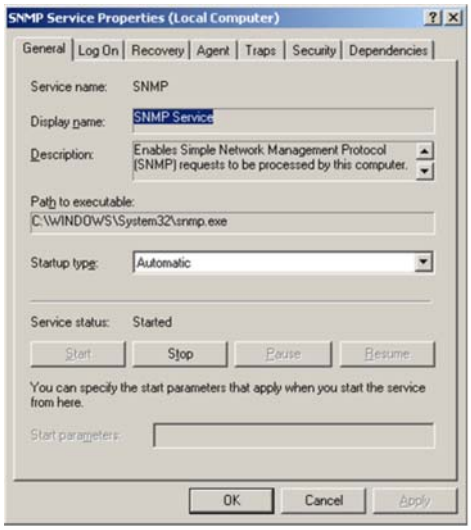
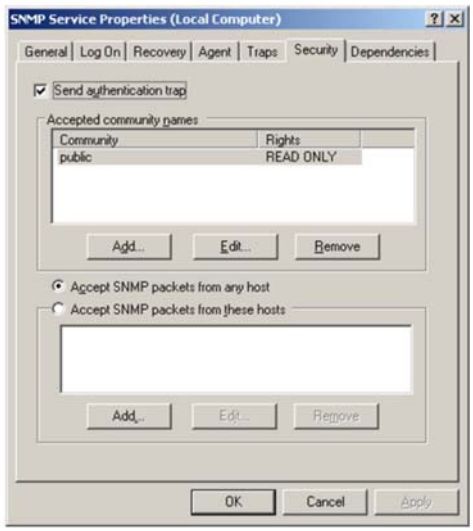
3.2.3.2 Configure SNMP

After the SNMP service is running, it needs to be configured:

1. Click the Start menu.
2. Select **Control Panel**.
3. Select **Administrative Tools**.
4. Select **Services**.
5. Double-click on **SNMP Service** in the list to open the properties window, as shown in the screen shot on the left.
6. Select the **General** tab and ensure that **Startup type** is set to **Automatic**, so that it starts every time the machine is rebooted.



7. Select the **Security** tab and under **Accepted community names** ensure that **public – READ ONLY** is selected, as shown in the screen shot on the left.
8. Below this, select **Accept SNMP packets from any host**.



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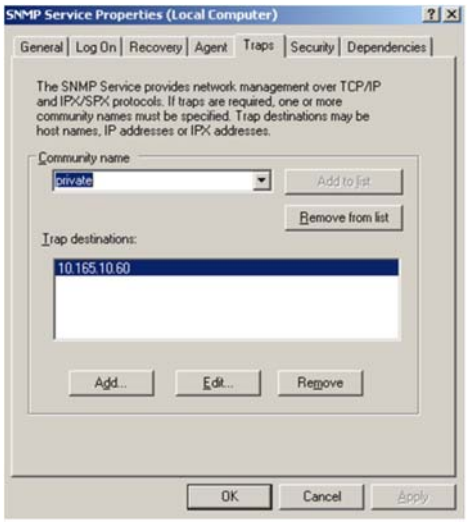
9. (Optional) If the IP address of the SNMP manager station (e.g. Monitor One) is known, select the **Traps** tab and enter the IP address under **Trap destinations**. This is only necessary if SNMP trap messages need to be reported back to the SNMP manager station.



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4. Settings

4.1 Configure Settings

When the software installation is complete, the Settings menu is used to configure specific sQ Fileflow settings as well as general software settings.

1. In Windows, navigate to: **Start – All Programs – SAM – sQ Fileflow V#.# – sQ Fileflow V#.# Settings**.
2. Right-click **Settings** then select **Run as administrator**.
3. Use the scroll box at the top-left of the Settings window to set up Fileflow as described throughout this chapter. When a setting is changed within a menu, ensure that either **OK** or **Apply** are selected to action the changes for that menu.
4. Restart the software in order to see any changed settings.

Some of the options featured in the Settings menu only become available after running the software up for the first time.

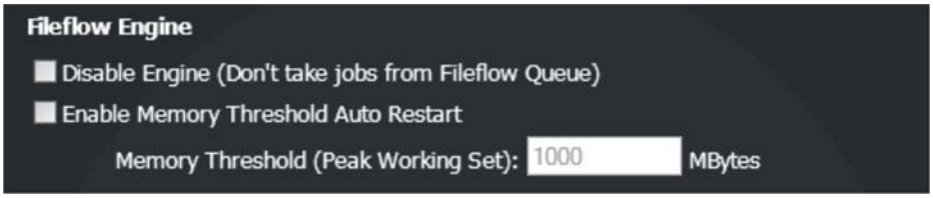
Only the settings that directly affect sQ Fileflow are described in this chapter.

4.1.1 Fileflow Queue

From the top-left drop-down box, select **Fileflow Queue**.

4.1.1.1 Fileflow Engine

Disable Engine is off by default.



An engine can be temporarily disabled, for example, during an upgrade.

Enable Memory Threshold Auto Restart is off by default and should only be enabled if memory usage is likely to exceed the total memory of the system.

When enabled, software restarts automatically if the peak working set memory used by the Fileflow Engine exceeds a predefined limit.

Restarts occur between jobs and last approximately 30 seconds; no user intervention is required. The engine then continues to process jobs normally.

The **Memory Threshold** value (default 1000 MBytes) is the threshold of peak working set memory usage used by the Fileflow Engine which causes the auto restart described above. A value that is too low causes a high rate of unnecessary restarts, whereas a higher value delays the auto restart. Ensure there is enough RAM to cope with higher memory usage.

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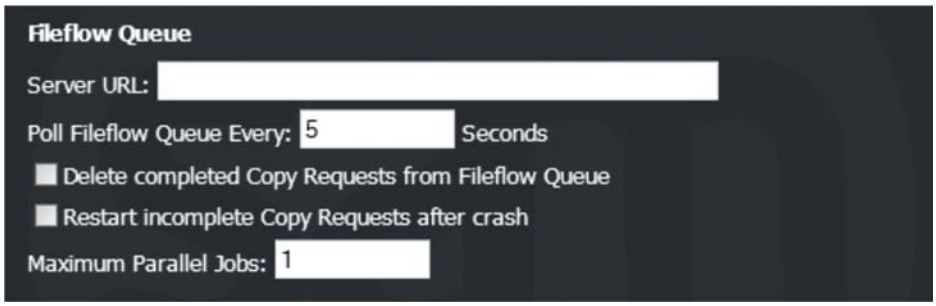
4.1.1.2 Fileflow Queue

Enter the URL of the Fileflow Queue in **Server URL**. The **Server URL** is the base URL for the FFQ client API.



The default HTTP port of the Fileflow Queue is 8080, and the default address is **/fileflowqueue/ffq**

(i.e. the default URL is **http://<FFQ hostname>:8080/fileflowqueue/ffq**).

Poll Fileflow Queue Every [5] Seconds controls the rate at which sQ Fileflow contacts the Fileflow Queue for new jobs; it has a default of 5 seconds.

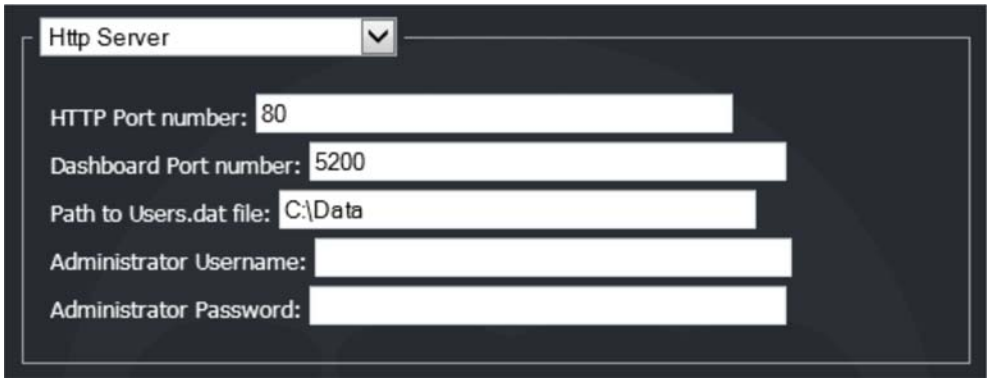
Delete completed Copy Requests from Fileflow Queue (default off) determines if completed jobs are deleted from the Fileflow Queue.

Restart incomplete Copy Requests after crash (default off) determines if incomplete jobs (found during start-up) are re-started or aborted.

4.1.2 HTTP Server

From the top-left drop-down box, select **Http Server**.

The **HTTP Port number** field displays the TCP port number of the HTTP server; port 8080 is the default so should only be changed if necessary.



Dashboard Port Number displays the UDP port number for the communications between the HTTP server and dashboard clients. The default is 5200; only change this if necessary for firewall settings.

Path to Users.dat file displays a default of **C:\Data**. This is the path to the password file of the HTTP server. Some web pages are protected and require a username/password login to view them. On installation, or if this file is deleted, it is recreated and sets a default administrator username of ‘quantel’ with the password ‘password’. **Administrator Username** and **Administrator Password** can both be changed if required.

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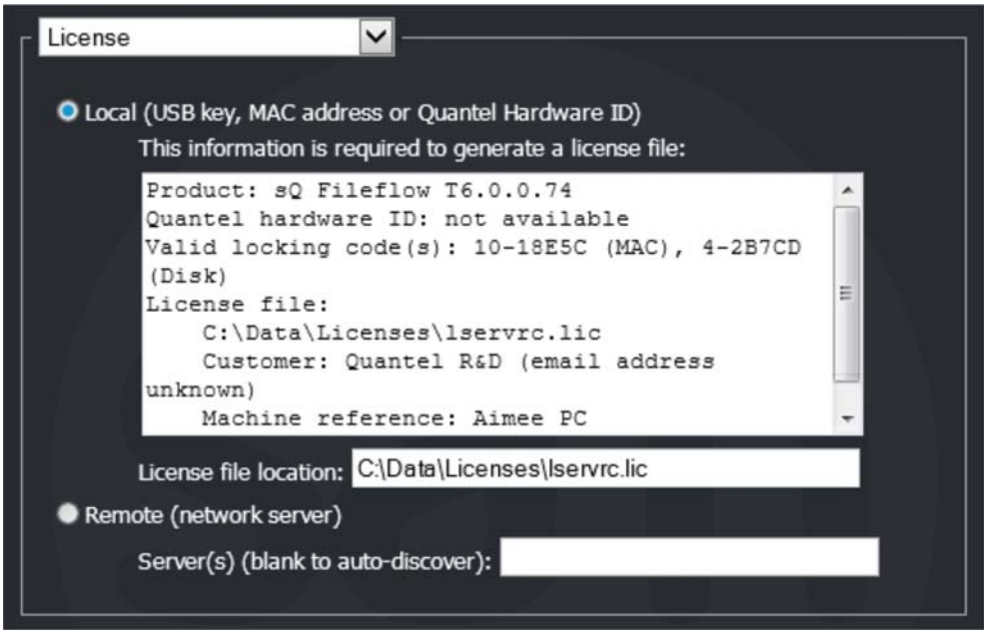
4.1.3 License

From the top-left drop-down box, select **License**.



sQ Fileflow requires a valid license; a static local license file or a network license server may be used. The license is periodically checked during operation, so a static local license file is recommended for sQ Fileflow, as network problems could cause a network license to be lost during operation.

The local license file should be placed in the following location:

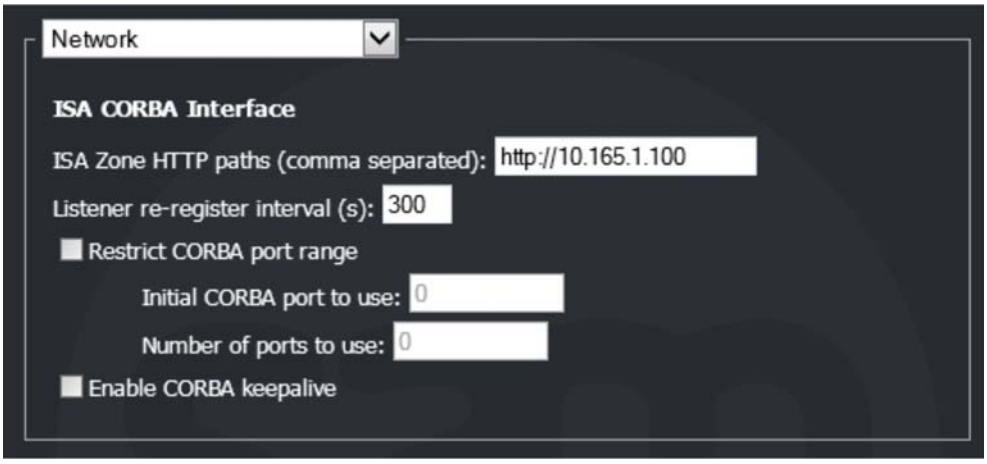
C:\Data\Licenses\lservrc.lic.

4.1.4 Network

From the top-left drop-down box, select **Network**.

4.1.4.1 ISA CORBA Interface

The **ISA Zone HTTP paths (comma separated)** (default http://127.0.0.1) field must have the IP address or host name of the Home Zone's ISA Manager PC entered here; master and slave ISA Manager PCs can be entered if separated by commas.



The **Restrict CORBA port range (**default off) field can be used for firewall settings if necessary to restrict the IP port range used by CORBA.

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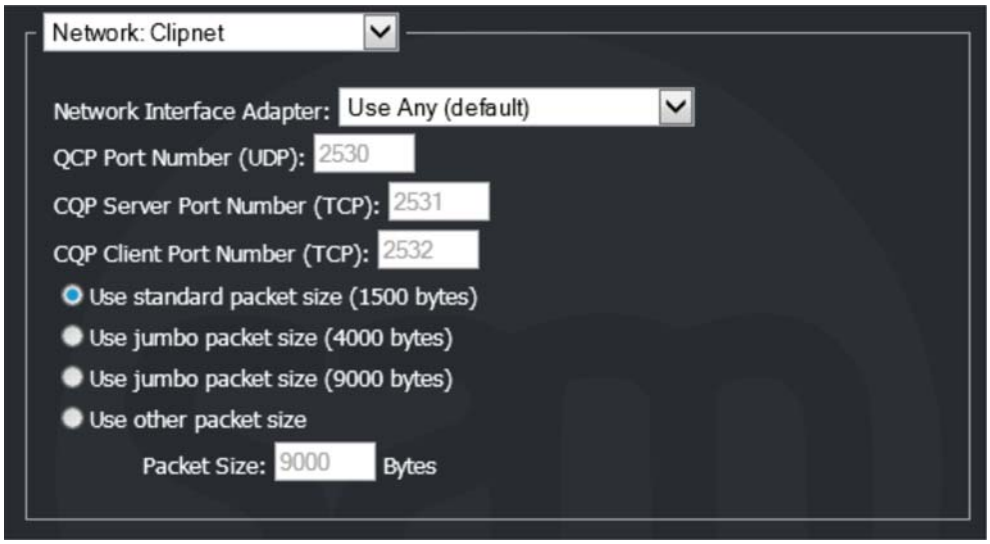
4.1.5 Network: Clipnet

From the top-left drop-down box, select **Network: Clipnet**.

The **Network Interface Adapter** can be used to ensure that a specific LAN adapter is used for the Clipnet protocol to the client.

With multi-homed systems, Clipnet traffic may not work correctly if this setting is left on 'Use Any' as the incorrect adapter may be chosen.



The **QCP Port Number (UDP)** (default 2530) field displays the UDP port number used for the Clipnet traffic. Change this only if necessary for firewall settings; this can only be changed via the registry.

The **CQP Server Port Number (TCP)** (default 2531) displays the TCP port number used for the CQP Server. Change this only if necessary for firewall settings; this can only be changed via the registry.

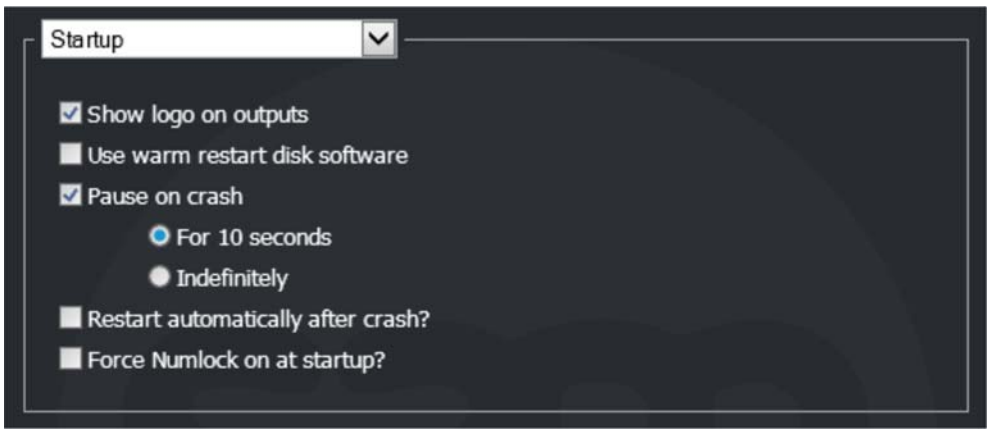
The **CQP Client Port Number (TCP)** (default 2532) displays the TCP port number used for the CQP Client. Change this only if necessary for firewall settings; this can only be changed via the registry.

The **Packet Size** is the maximum size of the payload used in Clipnet transfers. Set this to **Use jumbo packet size (9000 bytes)** for correct operation.

4.1.6 Startup

From the top-left drop-down box, select **Startup**.

Pause on crash (default on) should be turned off so that sQ Fileflow can restart immediately.



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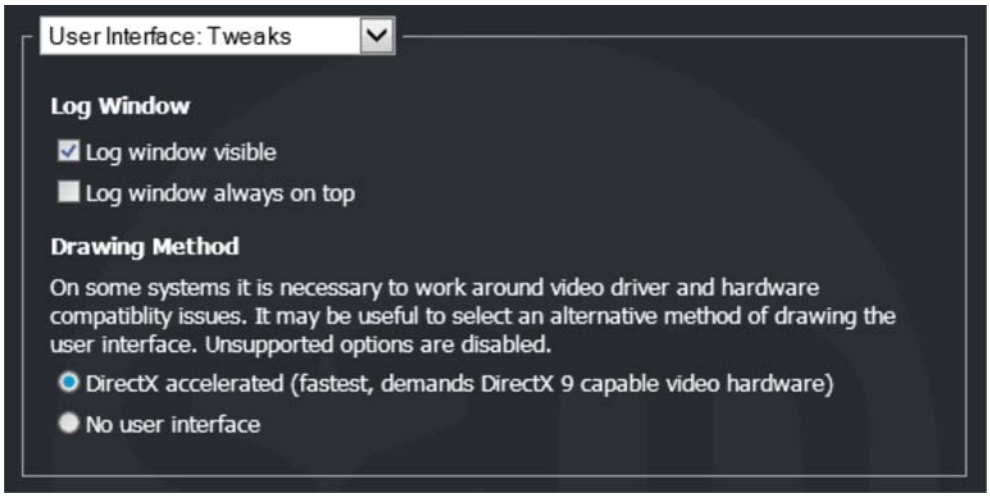
4.1.7 User Interface: Tweaks

From the top-left drop-down box, select **User Interface: Tweaks**

Log window visible (default on) controls if the log window is visible or not.

Log window always on top (default off) controls whether the log window is always on top of other windows.



No user interface (default off) must be switched on, or sQ Fileflow cannot start.

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5. Using Fileflow Queue

5.1 Monitoring and Administration

See “Client Prerequisites” on page 10 before using the interface.

5.1.1 Using the Web Interface

sQ Fileflow has no desktop, but the FFQ’s processes are viewed and modified via a web browser on any network connected PC:

The FFQ web interface allows the following:

- Manually import jobs
- Manually Export jobs
- View all jobs in the queue
- Manage the queue
- Create and manage Watch Folders.

To access the FFQ web interface:

1. From any network connected PC, open the Mozilla Firefox or Google Chrome browser.
2. Type **http://<hostname>:<port>/fileflowqueue** in the browser Address Bar.

   Replace **<hostname>** with the sQFileflow PC name or IP address, and **port** with the FFQ’s HTTP port number e.g. **8080**.

   For example, **http://scope:8080/fileflowqueue**.
3. Depending on the network configuration, a security prompt may display requesting username and password. Enter the correct credentials and press **OK**.

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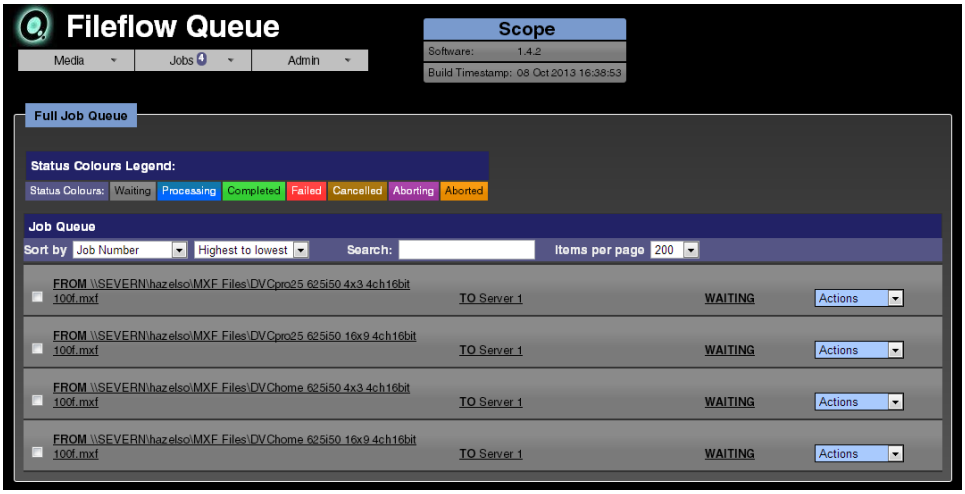
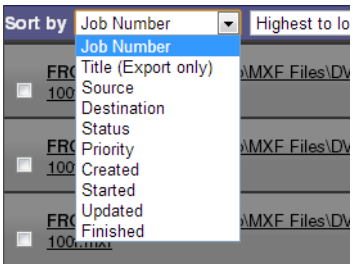
5.2 Full Job Queue

The Fileflow Full Job Queue page provides a list of all queued clips with their status, priority and further options for each clip in the drop-down on the right.

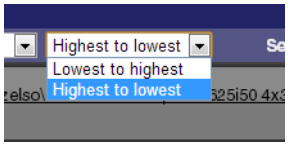


5.2.1 Sort By Options

Use the **Sort By** drop-down to choose how jobs are sorted in the queue. For example, to sort by creation date, select **Created**. Jobs are sorted by **Job Number** as a default.



The **Highest to lowest** drop-down determines how the list is sorted based on the sort option (see above). The options here vary depending on what is selected in the **Sort By** drop-down. Possible options include **Highest to lowest**, **A-Z** and **Latest to oldest**.



5.2.2 Searching

The **Search** text box allows searches to be performed based on keywords.

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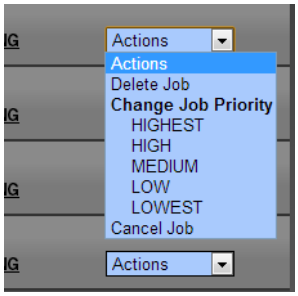
5.2.2.1 Wildcards

Wildcards can be used to aid the searching process.

Wildcard	Description
&	When two or more keywords are typed separated by an ampersand (&) it searches for corresponding words either of which display in the title. For example, typing PRESIDENT & AIRPORT finds 'President Arrives at Airport' and also finds 'London's Third Airport'.
?	'?' is a single character wildcard, for example ?ART finds Cart but not Art or Start.
*	'*' is a multiple character wildcard, for example *ART finds Art, Cart, Start, Starter and Artwork. '*' wildcards can be used before and after characters, for example *Art* finds Start, Starter, Party etc. '*' is also useful for finding common misspellings e.g. '*TERS' for 'Reuters'.

5.2.3 Job Actions

The **Job Actions** columns allows jobs to be deleted, prioritised or cancelled.



Options in the **Actions** drop-down vary depending on the job's current status:

Delete Job	deletes the job from the queue.
Change Job Priority	this option displays on a job that is **WAITING**. The levels of priority that can be applied are **HIGHEST**, **HIGH**, **MEDIUM**, **LOW** and **LOWEST**. Select the option that is required for the job.
Cancel Job	cancels the job and removes it from the queue.
Abort Job	this option displays on a job that is currently **PROCESSING** Selecting this stops the job.
Resubmit Job	this option displays on a job that has **FAILED**, **ABORTED** or **COMPLETED**. Selecting this restarts the job.

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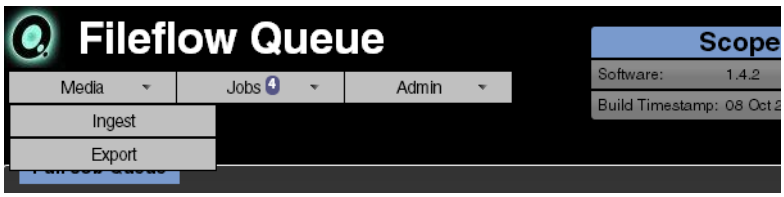
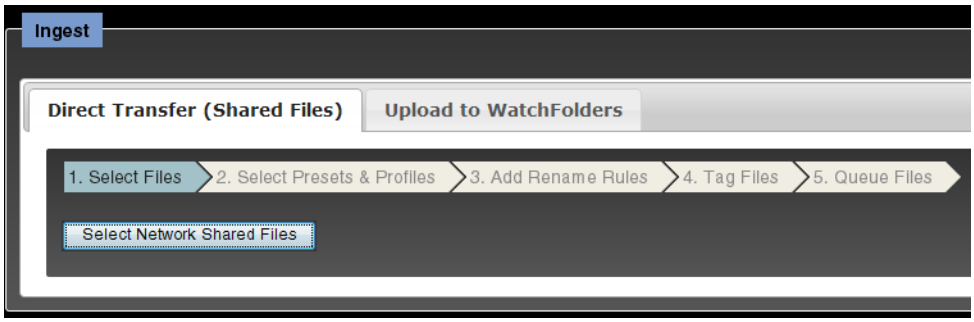
5.3 Ingest

To access ingest options, select the **Media** box at the top of the page and choose the **Ingest** option. Two tabs display with options to perform a **Direct Transfer (Shared Files)** or to **Upload to Watch Folders**.

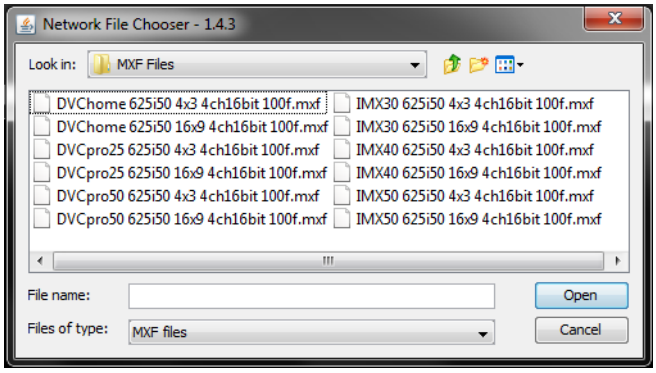


5.3.1 Direct Transfer (Shared Files)

To perform a direct transfer into the ISA system, ensure that **Direct Transfer (Shared Files)** is selected, then:



1. Select the **Select Network Shared Files** box.
2. Select the required MXF file(s) from the pop-up and press **Open**. The files for transfer now display in the main window.



3. The chosen MXF files display in an ingest queue. Press **Next**.

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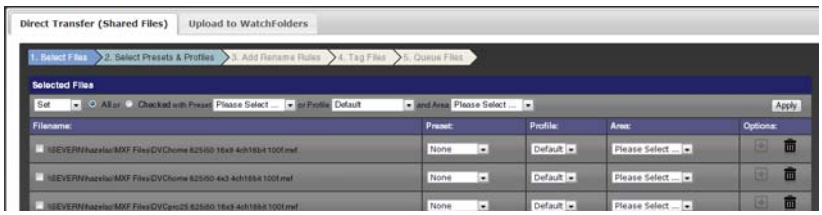
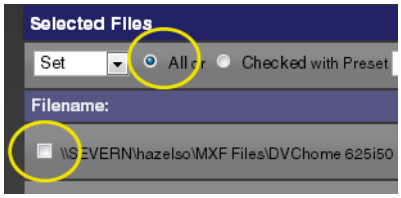
5.3.1.1 Select Presets & Profiles

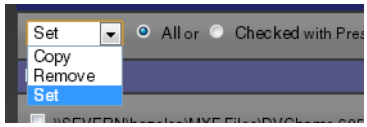
The **Select Presets & Profiles** tab displays allowing presets and profile settings to be applied to either individual files or a selection.



1. Select individual files using the check boxes. Alternatively, select the **All** option to apply the settings to all files in the queue.

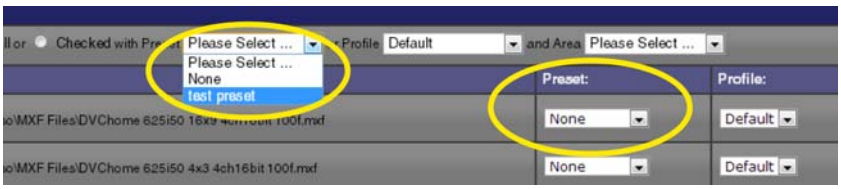


2. The **Set** drop-down gives the following options: **Set**, **Copy** and **Remove**.

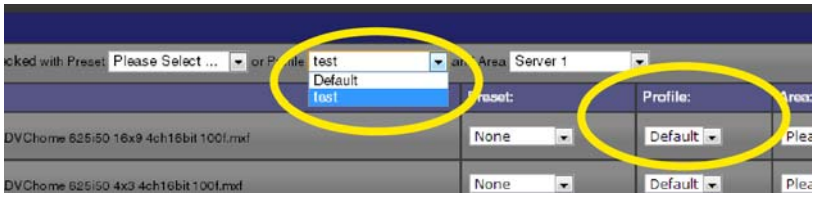


Selecting **Set** gives the option to apply profiles and presets to jobs. Selecting **Copy** makes a copy of the selected job(s) in the queue and **Remove** removes the job from the queue.

3. With **Set** selected, choose a preset from the **Checked with Preset** drop-down or the individual **Preset** drop-downs.



4. Alternatively, select a profile from the **or Profile** drop-down or the individual **Profile** drop-downs.



5. Select a destination area from either the **and Area** drop-down or the individual **Area** drop-downs.

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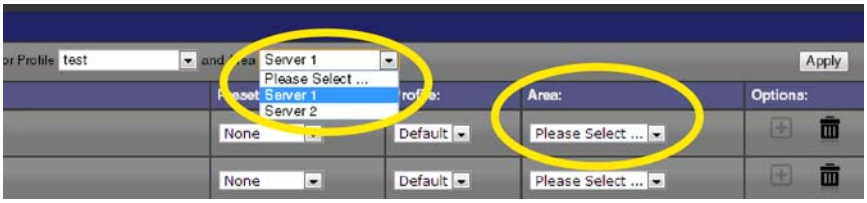
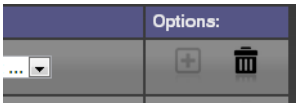


6. The **Options** column allows jobs and their current settings to be copied by pressing the icon, or removed from the queue by pressing the icon.



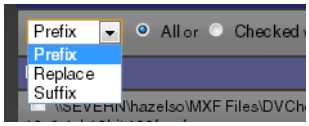
7. When the required options have been set, select the **Apply** box located above the **Options** column
8. Select **Next**.

5.3.1.2 Add Rename Rules

The **Add Rename Rules** tab determines how each clip is named after it has been ingested into the server. Clips can be completely renamed or have a prefix or suffix applied to them.

To rename a clip:

1. Select individual jobs using the check boxes. Alternatively, select the **All** option to apply the settings to all jobs in the queue.
2. Use the **Prefix** drop-down to select whether to add a prefix, replace the current name or add a suffix. Select the required option.



3. Type a new name, prefix or suffix in the text box.
4. Each individual job can have a Rename Rule applied to it by using the **Rename Rules** drop-downs.
5. When the required options have been set, click **Next**.

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5.3.1.3 Tag Files

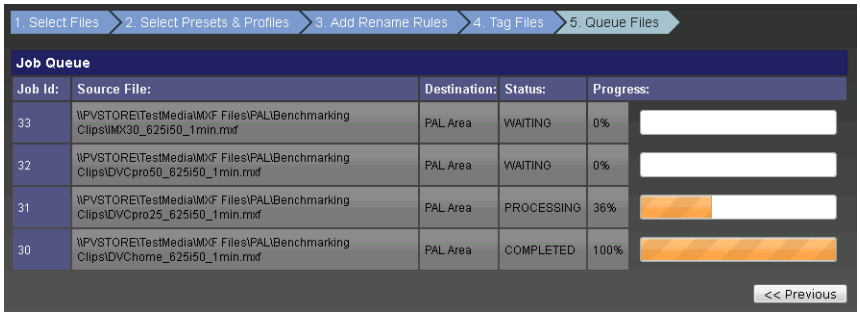
Use the **Tag Files** tab to associate metadata tags with each of the files.

To add metadata tags:

1. Select individual files using the check boxes. Alternatively, select the **All** option to apply the settings to all files in the queue.
2. Type a metadata tag in the **Owner** and **Category** text boxes. If **All** or **Checked with** are selected then type tags into the **Owner** and **Category** text boxes in the top bar and hit Apply. Alternatively, apply individual settings to each file by using the **Tags** column.
3. When the required options have been set, click **Next**.

5.3.1.4 Queue Files

Use the **Queue Files** tab to monitor the progress of each job as the files transfer into the system. Each file has a **Destination** column, a **Status** column and a **Progress** column. The progress is shown as both a percentage and a progress bar.



5.3.2 Upload to Watch Folders

To perform an upload to a watch folder, select the **Upload to Watch Folders** tab and follow these steps:

1. Select the target Watch Folder by pressing the **Target Watch Folder** drop-down.

2. Select the files to be uploaded by pressing on the **Select Files** box. This opens a Windows Explorer style File Chooser. Use <Shift> and/or <Ctrl> keys to select multiple files.
3. Press **Open** to add the files to the Watch Folder.

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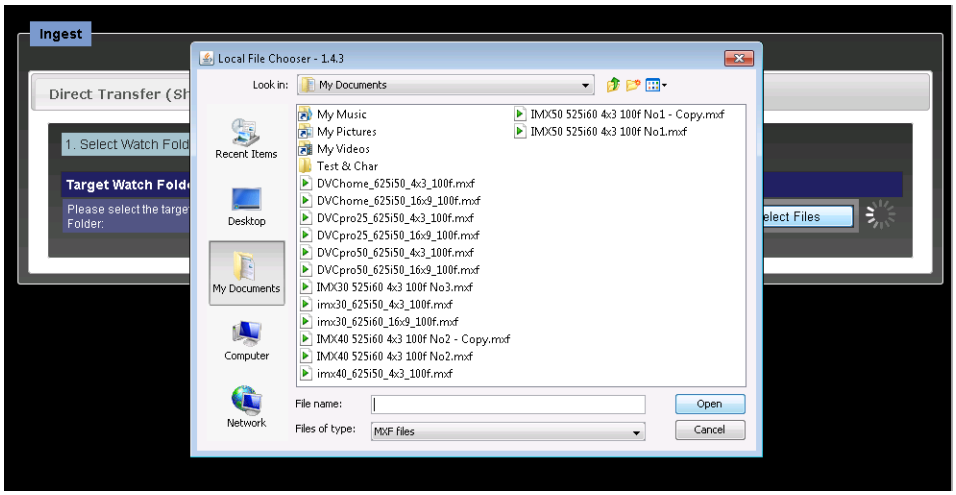
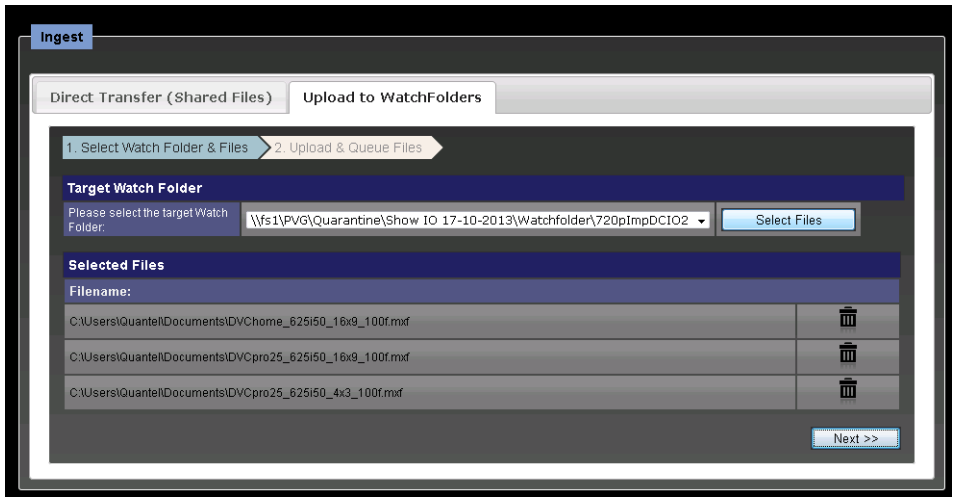
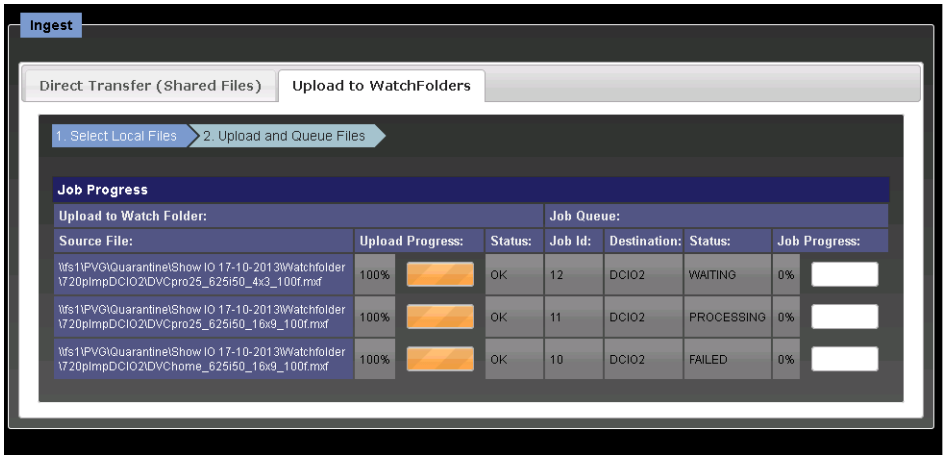


Once the files have been chosen they display in a list. To add more files repeat steps 2 and 3.

4. Use the icon to remove any files from the list.
5. Click **Next** to upload the files to the Watch Folder.



The **Upload and Queue Files** page shows two types of progress monitors: **Upload to Watch Folder** progress and **Job Queue** progress. Firstly, the **Upload Progress** of each job is shown as both a percentage and a progress bar. When this is complete, the jobs begin to ingest into the system. Again the progress is shown as both a percentage and a progress bar.



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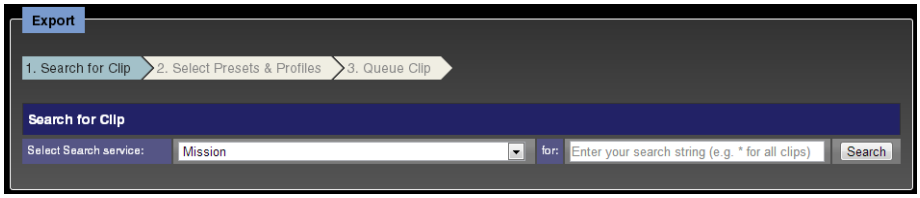
5.4 Export

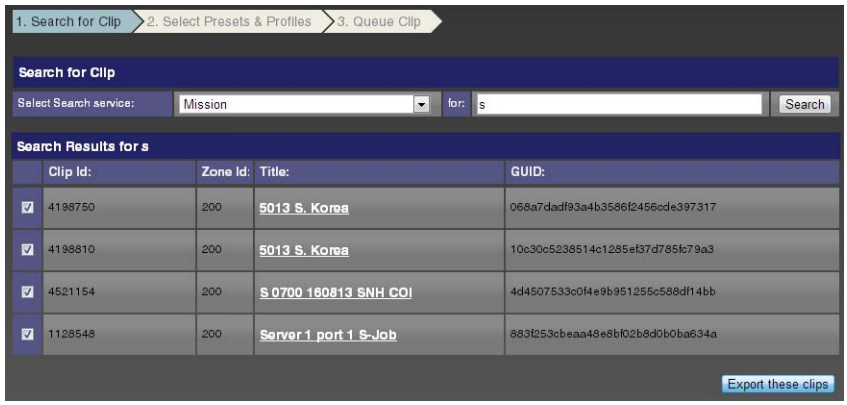
To access export options, select the **Media** box at the top of the page and choose the **Export** option.



5.4.1 Search for Clip

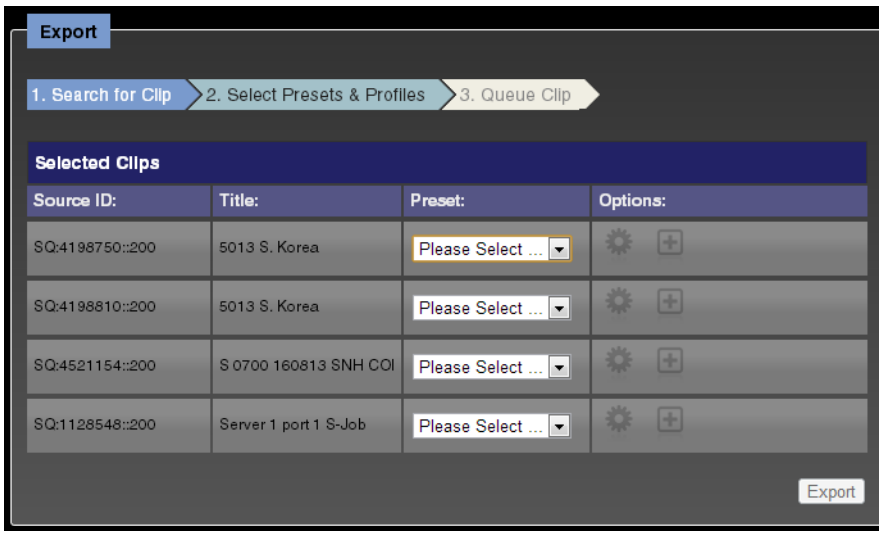
To search for clips to export:

1. Use the **Select Search Service** drop-down to select the search area.
2. Use the text box to the right to enter a search string and press **Search**; a results list displays.



3. Use the check boxes to select which clips to export.
4. When ready, select the **Export these clips** box.

5.4.2 Select Presets & Profiles



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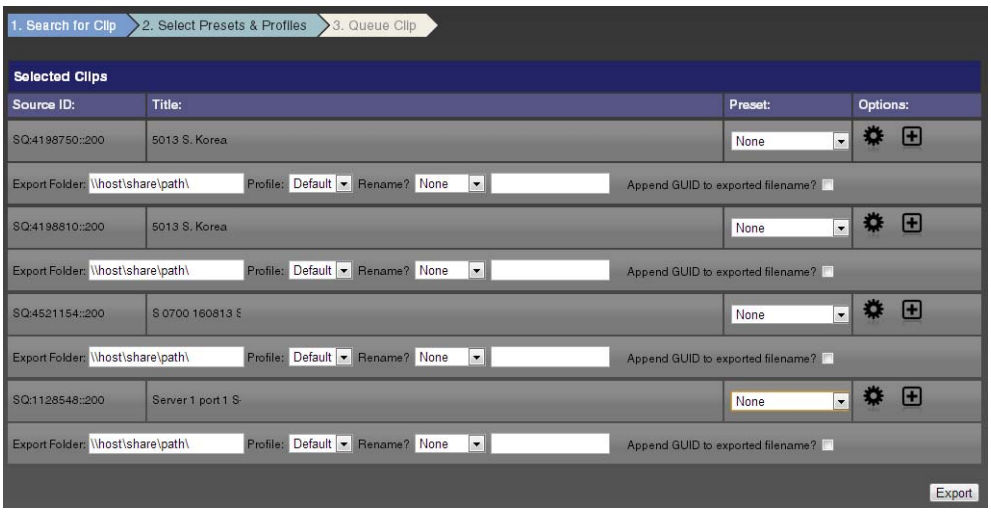
Use the **Select Presets & Profiles** tab to apply presets and profile settings to each clip.

1. Select a preset from the **Preset** drop-down. If **None** is selected from the **Preset** drop-down additional options display for that clip (see following screenshot). If any preset other than **None** is selected, proceed to step 6.



2. Using the **Export Folder** text box, enter the destination path for the clip.
3. Use the **Profile** drop-down to select profile settings for the job.
4. The clip can be renamed by typing a new name in the **Rename** text box. Use the Rename drop-down to select whether to replace the entire name, or to add a suffix or a prefix to the existing name.
5. Check the **Append GUID to exported filename** box to append a GUID to the clip name, allowing each clip to have a unique identifier.
6. The **Options** column allows files to be copied by pressing the icon, or removed by pressing the icon.
7. When all required options have been set, select the **Export** box.

After the **Export** box has been selected the following notice displays: "**You are scheduling multiple clips for export. Do you wish to continue?**" Press **OK** to continue the export.

The following notice then displays: "**Scheduling successful. New Job Queue IDs:**" followed by a series of numbers. These are the positions in the job queue of the clips that are being exported. For example "**15, 16, 17, 18**".

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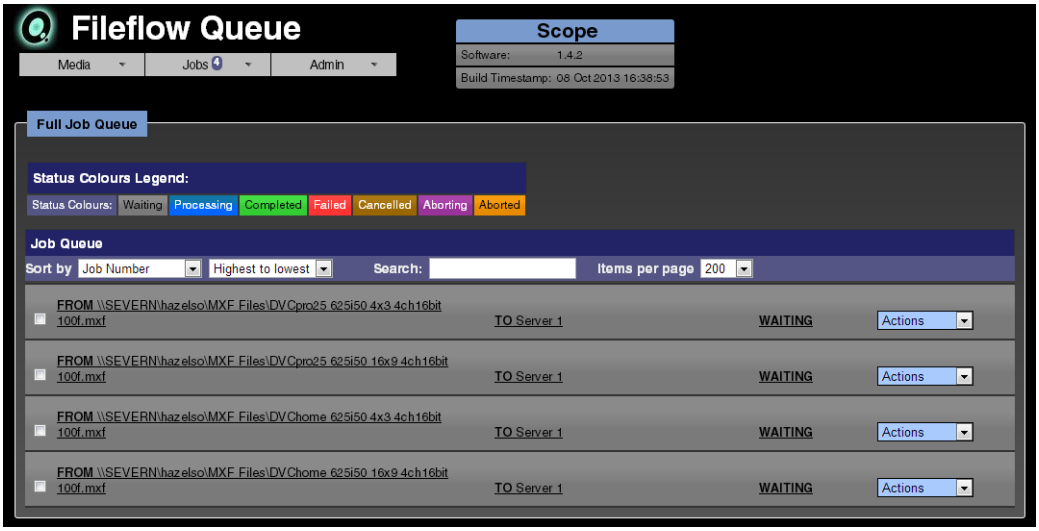
5.5 Jobs

Use the **Jobs** tab to monitor the current ingest and export jobs.

Selecting the **Jobs** tab provides the following options to choose from: **Full Queue**, **Prioritised Queue**, **Progress** and **By Status**.

5.5.1 Full Queue

The **Full Queue** displays ALL the jobs in order of job number. Above the queue there is a legend that displays status colours. Each job in the queue is represented by a different colour based on its current status. For example, blue jobs are processing, red jobs have failed and green jobs have completed.



There is a ‘sort and search’ bar above the queue that the queue to be searched or sorted based on one of the **Sort by** criteria. See “Sort By Options” on page 40.

5.5.2 Prioritised Queue

The **Prioritised Queue** displays ALL jobs in order of priority. The list is sorted from **HIGHEST** to **LOWEST**.

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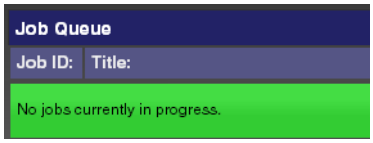
5.5.3 Progress

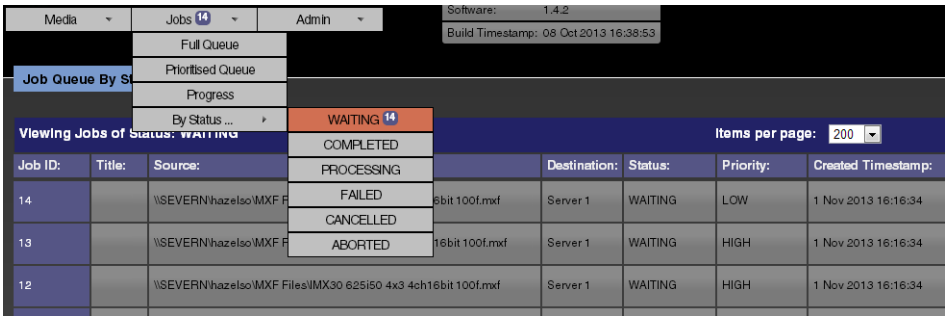
The **Progress** option displays the currently processing job and its progress. Progress is shown as both a percentage and a progress bar. When a job has completed it is removed from this display.

When there are no jobs being processed the following notice displays.



5.5.4 By Status

Selecting **Status By** and then one of the sub options (**WAITING**, **COMPLETED**, **PROCESSING**, **FAILED**, **CANCELLED** or **ABORTED**) displays a list of all the jobs in the queue that match that status.



For example, in the screenshot, **WAITING** has been chosen and the list has been filtered to only display clips that are waiting to be processed.

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5.6 Admin

Use the **Admin** tab to manage Presets, Profiles and Watch Folders and to access a number of job delete options.

Presets	Select **Presets** to create preset settings to be used for ingest and export jobs.
Profiles	Select **Profiles** to create profile settings to be used for ingest and export jobs.
Watch Folders	Select **Watch Folders** to manage, add and delete Watch Folders.
Delete All	Deletes all jobs from the queue.
Delete Waiting	Deletes all ‘waiting’ jobs from the queue.
Delete Cancelled	Deletes all ‘cancelled’ jobs from the queue.
Delete Aborted	Deletes all ‘aborted’ jobs from the queue.
Delete Failed	Deletes all ‘failed’ jobs from the queue.
Delete Completed	Deletes all ‘completed’ jobs from the queue.
Delete Selected	Deletes all selected jobs from the queue. Clips are selected by checking the check boxes to the left of the job queue.
Delete...	Select **Delete...** to delete all jobs that occurred on or before a certain date.

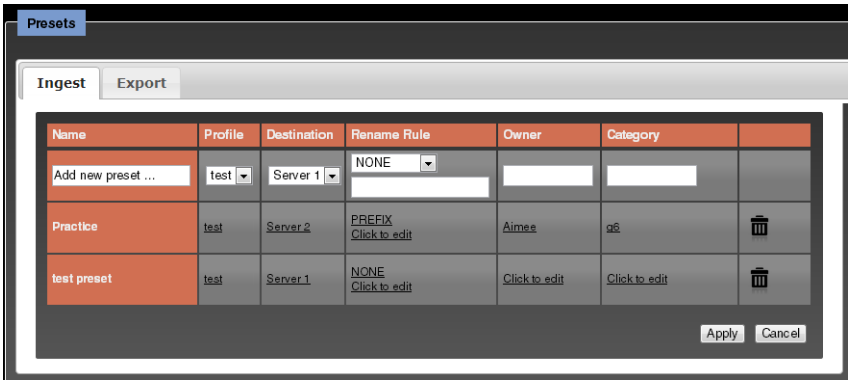
5.6.1 Presets

Selecting the **Preset** option from the **Admin** tab displays options to create and manage presets to be used for ingest and export jobs. Existing presets display in a list.

5.6.1.1 Ingest

To create a new ingest preset:

1. Select the **Ingest** tab.



2. Enter a name for the preset in the **Name** text box.
3. Select a profile setting using the **Profile** drop-down (see “Profiles” on page 52 for information about profiles).
4. Choose a destination using the **Destination** drop-down.
5. Select a **Rename Rule** from the **Rename Rule** drop-down. Options include **None**, **Replace**, **Prefix** and **Suffix**. Type the required text in the rename box.
6. Add a **Owner** and **Category** to the preset.
7. Click **Apply** to create the new preset and add it to the list of existing ingest presets.

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5.6.1.2 Export

To create a new export preset:

1. Select the **Export** tab.

2. Enter a name for the preset in the **Name** text box.
3. Select a profile setting using the **Profile** drop-down (see “Profiles” on page 52 for information about profiles).
4. Choose a destination using the **Destination** drop-down.
5. Check the **Append GUID to exported filename** box to append a GUID to the each exported clip name, allowing each clip to have a unique identifier.
6. Select a **Rename Rule** from the **Rename Rule** drop-down. Options include **None**, **Replace**, **Prefix** and **Suffix**. Type the required text in the rename box.
7. Click **Apply** to create the new preset and add it to the list of existing export presets.

5.6.2 Profiles

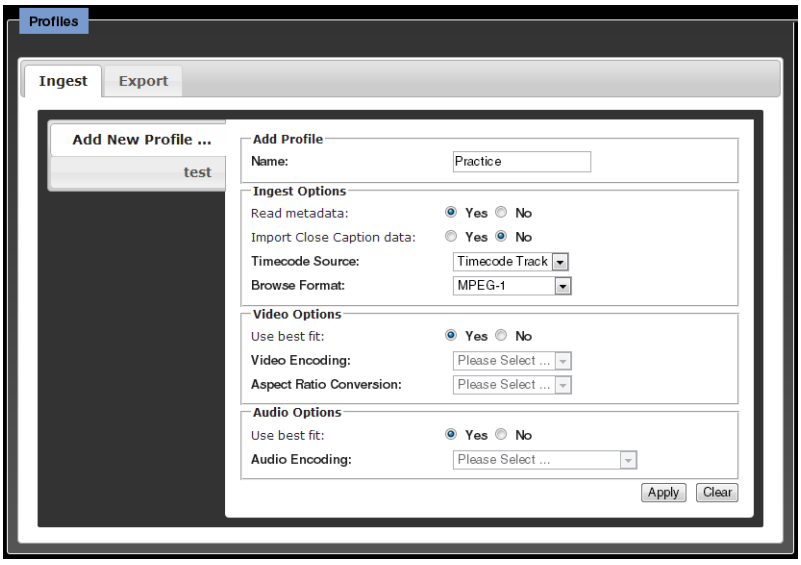
Selecting the Profile option from the Admin tab displays options to create and manage profiles to be used for ingest and export jobs. Existing presets are displayed in a list.

The Profile options available are the same as the Fileflow Engine Transcode settings. See “Transcode Settings” on page 59 for full explanations of each of the ingest and export options.

5.6.2.1 Ingest

To create a new ingest profile:

1. Select the **Ingest** tab.



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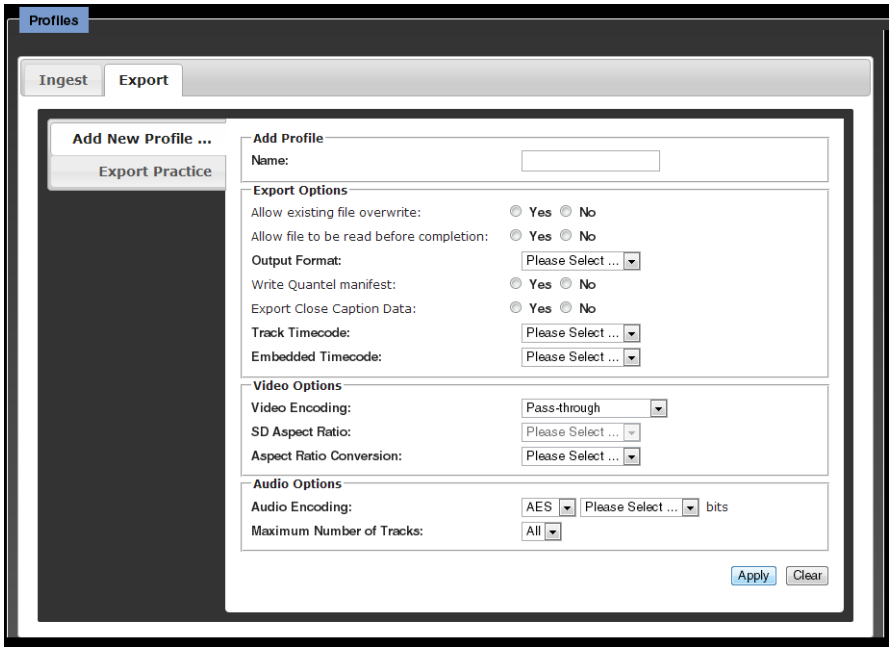
2. Select the **Add New Profile** tab.
3. Enter a name into the **Name** text box.
4. Select the relevant **Ingest Options**, **Video Options** and **Audio Options**.
5. Select **Apply** to create the new profile and add it to the list of existing ingest profiles.

5.6.2.2 Export

To create a new export profile:

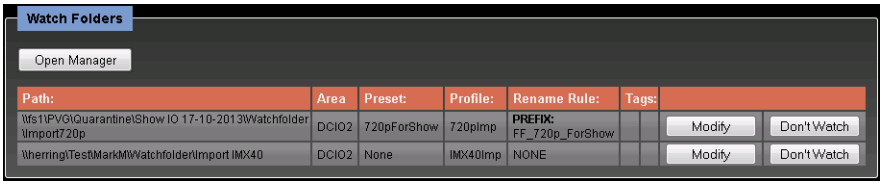
1. Select the **Export** tab.



2. Select the **Add New Profile** tab.
3. Enter a name into the **Name** text box.
4. Select the relevant **Export Options**, **Video Options** and **Audio Options**.
5. Select **Apply** to create the new profile and add it to the list of existing ingest profiles.

5.6.2.3 Watch Folders

Selecting the **Watch Folder** option from the **Admin** tab displays options to create and manage Watch Folder settings. Existing Watch Folders display in a list.



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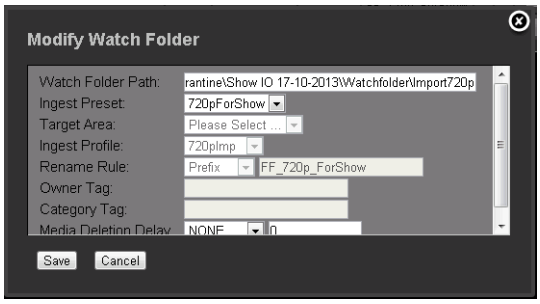
5.6.2.4 Modify Watch Folders

Existing Watch Folders have a **Modify** option and a **Don't Watch** option.

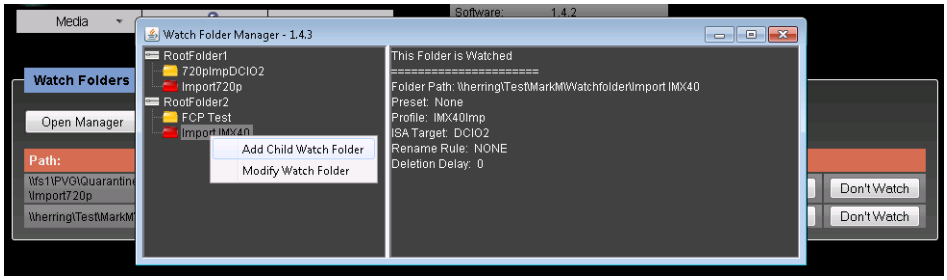


Select the **Modify** option to edit the details of the Watch Folder.

Selecting the **Don't Watch** option removes the Watch Folder from the list of Watch Folders. Any subsequent files dropped into this folder no longer trigger an Ingest job.

5.6.2.5 Create Watch Folder

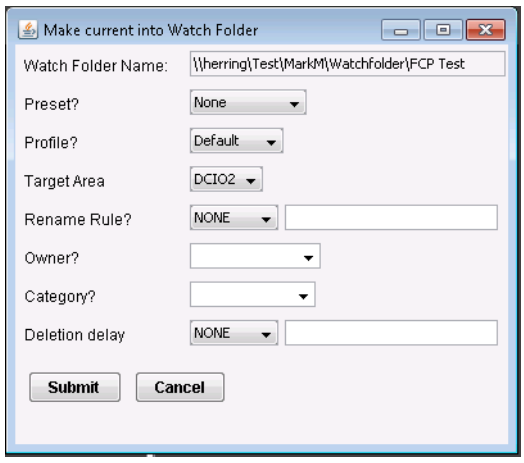
The **Open Manager** box opens the **Watch Folder Manager**.



Click on any folder in the Watch Folder Manager to see related information display on the right.

To turn a folder into a Watch Folder, right-click on the folder and select **Make into Watch Folder**. The menu that displays determines how files are processed when placed in this folder.

The **Watch Folder Name** field displays the Watch Folder path.



If required, select a **Preset** and a **Profile** from the drop-downs.

Choose a target area using the **Target Area** drop-down.

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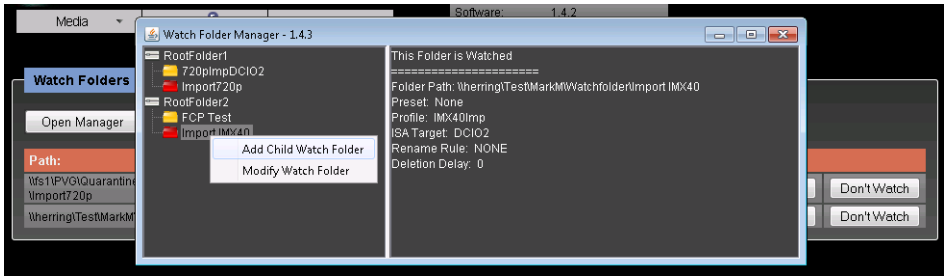
Other optional selections include **Rename Rule**, **Owner** and **Category**. Finally select deletion options if required.

Once all required options have been set, click **Submit**.

Right-clicking on a folder in the Watch Folder Manger window that is already set up as a Watch Folder displays the options: **Add Child Watch Folder** and **Modify Watch Folder**.

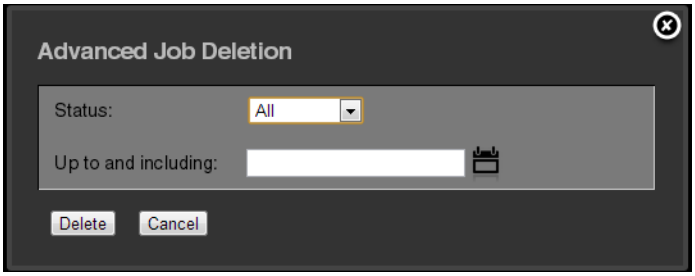


The **Modify** menu contains the same options as the **Make into Watch Folder** menu.

Selecting the **Add Child Watch Folder** adds a sub-folder to the selected folder and makes that sub-folder into a Watch Folder.

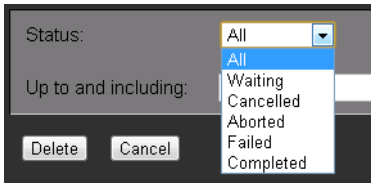
5.6.3 Delete...

Select the **Delete...** option from the **Admin** tab to perform an advanced job deletion.



To set up advanced deletion instructions:

1. Use the **Status** drop-down to filter jobs based on their current status criteria, e.g. **Completed**, **Failed** or **Waiting** etc.



2. Press in the **Up to and including** text box to display a calendar.
3. Use the calendar to select a reference date.
4. Select **Delete**.

All jobs that match the **Status** criteria that were added to the queue up to and including the chosen date are instantly deleted. For example, selecting **Status: Completed** and **Up to and including:** ‘December 31st 2014’, deletes all completed jobs that were added to the queue up to and including December 31st 2014.

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5.7 FFQ Within sQ Workstations

5.7.1 Web Tools

FFQ browser can be opened from within an sQ workstation if the **Web Tools** feature is enabled. The **Web Tools** are intended to provide quick and easy access to web-based applications such as sQFileFlow, Mission MediaCentre or the QTube Browser.

Web Tools displays as a tab on the sQ software Application Bar. Selecting the **Web Tools** tab displays a list of configured websites. Selecting one of these opens an embedded web browser.

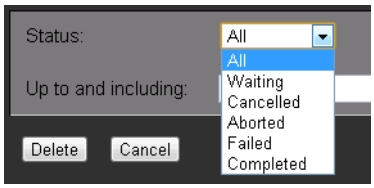
The range of websites available is configurable by system administrators in an XML file. The location of the XML configuration file is determined by the **Browser Settings** option in the Settings menu. It can be set to a network location so multiple machines offer the same web applications.

For more information about configuring the Web Tools option, contact SAM support.

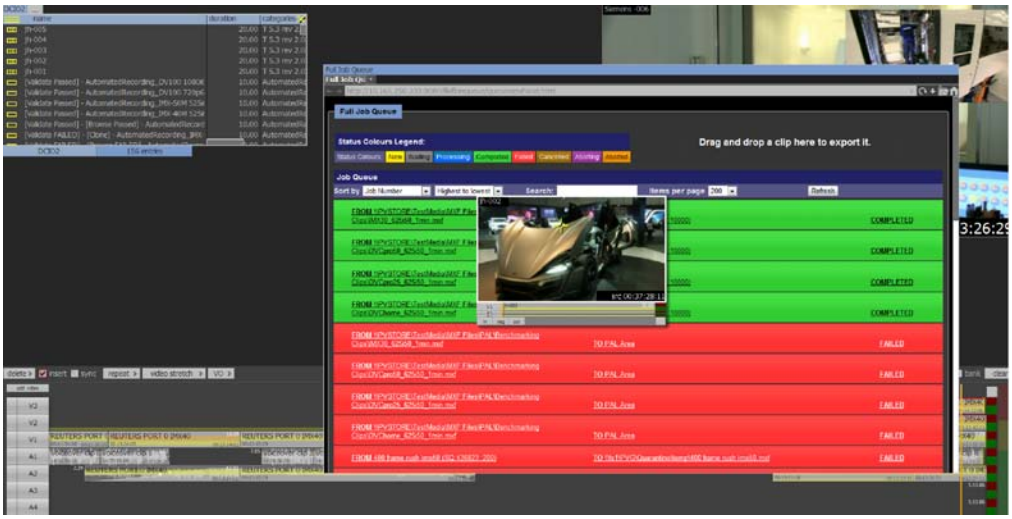
5.7.1.1 How to use the embedded FFQ

To use FFQ as an embedded browser within the application:

1. Locate the Web Tools tab on the Application Bar. Select this to see any configured web browsers.



2. Select the FFQ browser. The exact labelling of this depends on the name given during set-up. In the previous example it is **sQ Fileflow Queue**. This opens FFQ as an embedded web browser.
3. Drag and drop any clips to export, directly from the server bin to the Fileflow queue window. Once the clips have been added to the queue the **Export > Select Presets & Profiles** menu is initialised. See “Select Presets & Profiles” on page 43 for manual export instructions from this point.



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6. Using Fileflow Engine

6.1 Platform Monitoring and Administration

See “Client Prerequisites” on page 10 before using the interface.

6.1.1 Using the Web Interface

sQ Fileflow has no desktop, but the Fileflow Engine PC’s processes can be viewed and modified via a web browser on any network connected PC:

1. From any network connected PC, open the Mozilla Firefox or Google Chrome browser.
2. Enter **http://localhost** or **http://hostname** (replacing ‘localhost’ or ‘hostname’ with the sQFileflow Engine IP address or name) in the browser’s Address Bar.
3. Depending on the network configuration, a security prompt may display requesting username and password. Enter the correct credentials and press **OK**.

6.1.2 Initial Interface

After connection, the sQ Fileflow **Status – Summary** page displays:

At the top of the Status - Summary page there are three tabs that provide access to different monitoring and admin information: **Status**, **Admin**, **Diagnostics**. Select each tab to view a number of different options.

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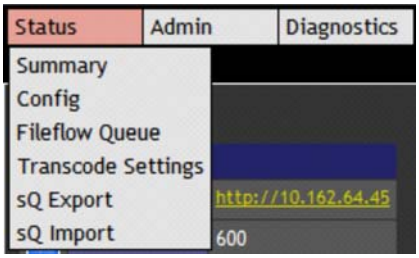
6.1.3 Status

The Status tab displays additional summary display options.

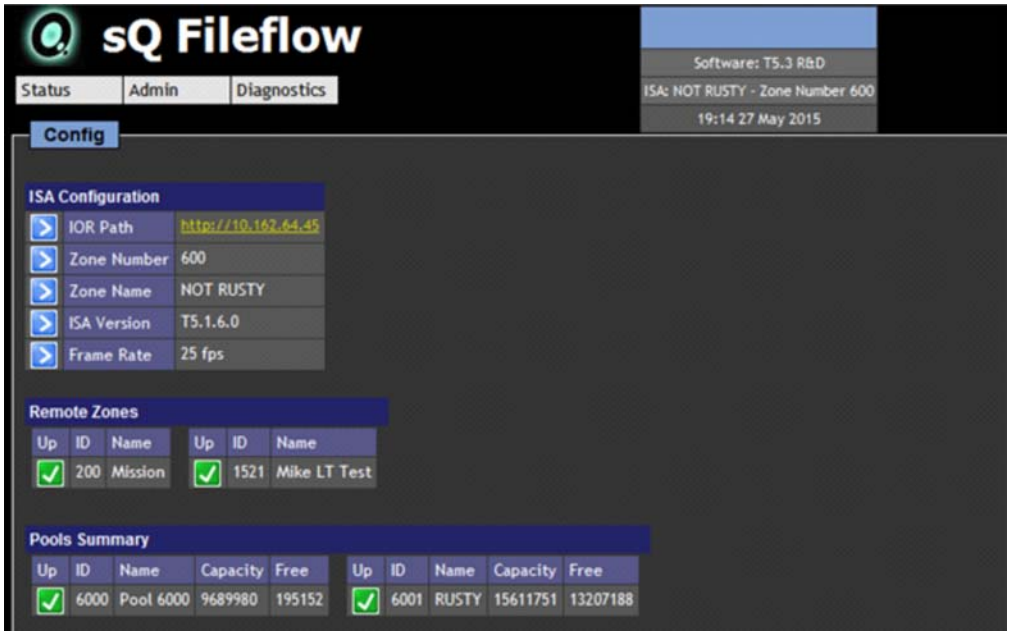


6.1.3.1 Summary

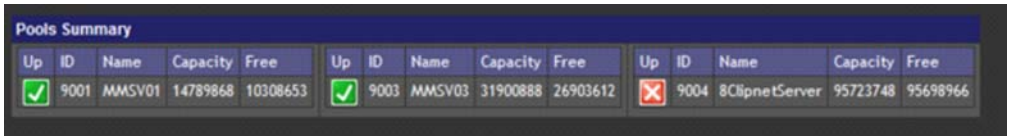
Provides a summary page of the platform, including software, memory usage, network configuration and the FileFlow Engine's uptime.

6.1.3.2 Config

Provides details of the ISA manager connected to for the purposes of transferring media. A list of Zones and Pools is shown.



A green tick icon indicates the system is operating normally, a red cross indicates the resource is not currently available; in which case contact the system administrator.



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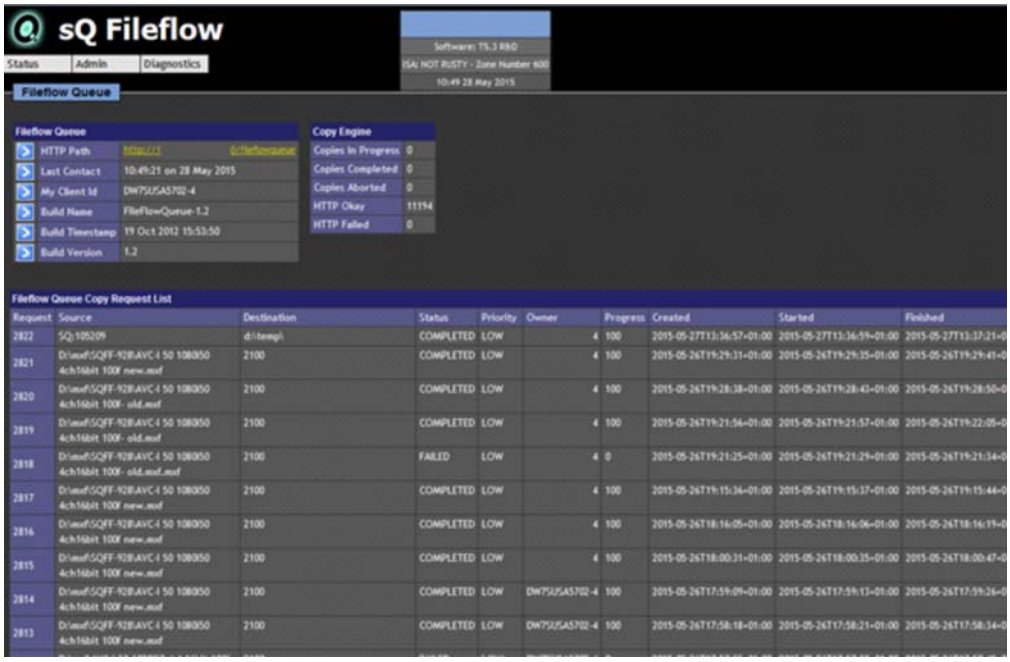
6.1.3.3 Fileflow Queue

Displays the Fileflow queue webpage summary. This shows details of the FFQ connected to and a basic summary of recently processed copy requests.

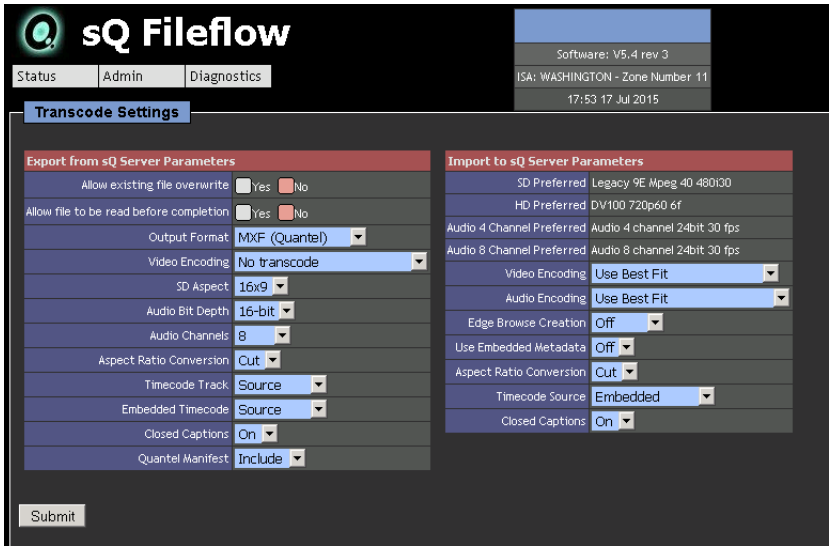


To view the Copy Request List select **Status – Fileflow Queue**.

To access the FFQ click on the HTTP address, where further details display about copy requests that are pending or have been completed in the queue. See “Full Job Queue” on page 40.

6.1.3.4 Transcode Settings

To set import and export transcode parameters, select **Status – Transcode Settings**, configure the required settings, then press the Submit button. The settings are now active for the next transcode.



These settings allow the modification of the “Export from sQ Server Parameters” and “Import to sQ Server Parameters”. The individual settings are described later in this section.

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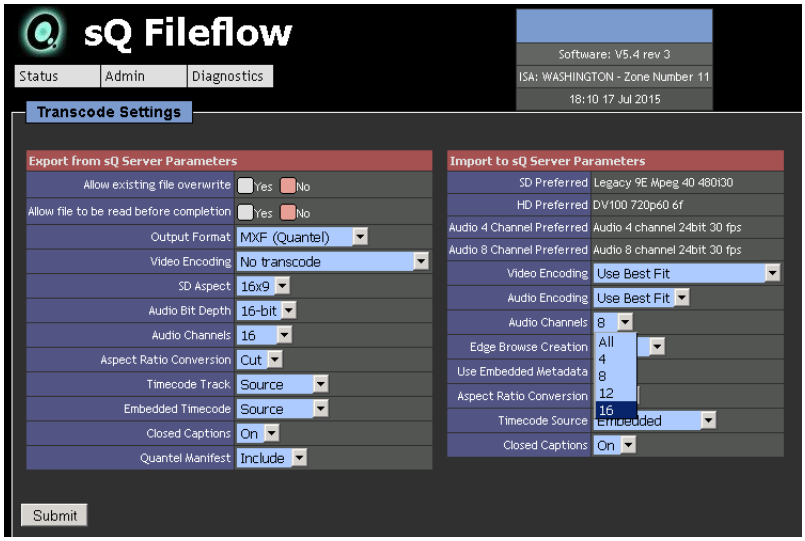
The transcode settings act as defaults and are only used in the event that a copy request for import or export is not associated with a profile. See “Select Presets & Profiles” on page 43.

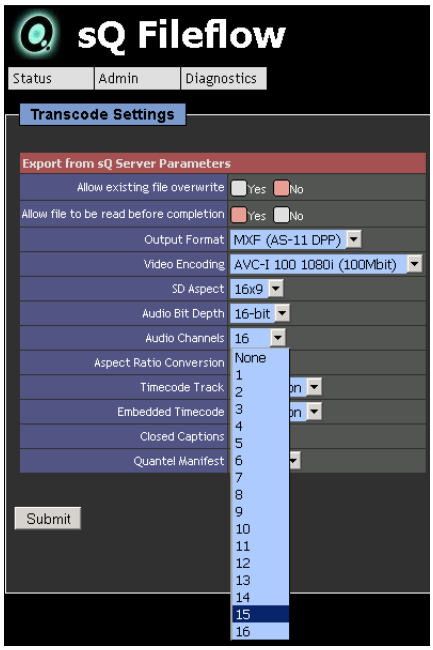
The Profile options available are the same as the Fileflow Queue Profile settings. See “Profiles” on page 52.

Transcode Settings in a 16 Channel Workflow

When a 16 channel workflow is configured, an additional Audio Channels selector displays in Import to sQ Server Parameters. This allows for the selection of 4,8,12 or 16 audio channels to be imported.



The Export from sQ Server Parameters Audio Channels selector range changes from 8 to 16 channels.



16 channel workflow requires an sQ server (SQ1200/SQ1800) and appropriate license option to be installed on the FileFlow engine.

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6.1.3.5 sQ Export

This page provides an administrator interface to manually submit a job request to the Fileflow queue to export a file.

This feature is not intended for regular use, but can be used for one-off transfers for diagnostic purposes, for example, testing during product installation.

Specify the source clip ID and zone separated by a colon and the file is exported to the destination path given. Refer to the Config page to obtain the available list of Zone IDs.

Example:- 123456:600 (CLIPID:ZONEID)

6.1.3.6 sQ Import

This page provides an administrator interface to manually submit a copy request to the Fileflow queue to import a file.

This feature is not intended for regular use, but can be used for one-off transfers for diagnostic purposes, for example, testing during product installation.

The default “import to sQ” transcode settings are used as configured. See “Transcode Settings” on page 59.

The Destination Pool or Area can be specified. Refer to the Config page to obtain available list of pools.

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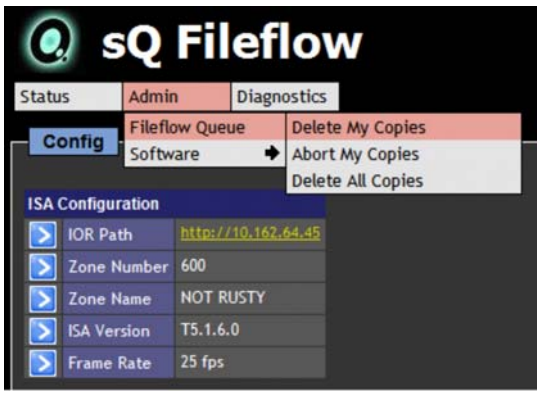
6.1.4 Admin

The Admin tab displays options to manage media in the Fileflow Queue, and options to stop/restart the Fileflow Engine application.

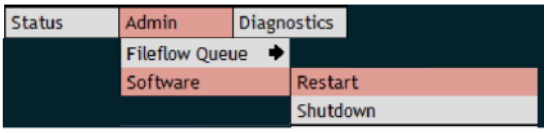
6.1.4.1 Fileflow Queue



Delete My Copies	deletes copies submitted from this engine.
Abort My Copies	stops copies submitted from this engine, but they remain in the Fileflow queue and can be resubmitted later or deleted, if requested.
Delete All Copies	deletes all jobs in the Fileflow queue that have been submitted from any engine. This should be performed with caution.

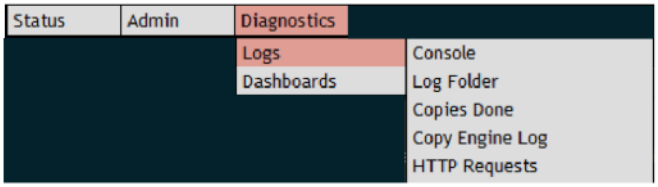
6.1.4.2 Software

Used to control the shutting down or restarting of the Fileflow Engine application.

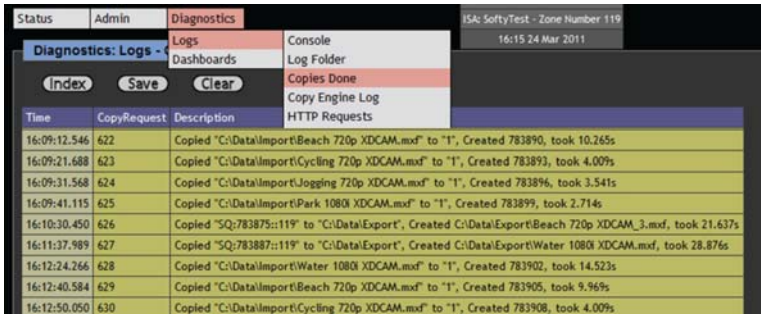


6.1.5 Diagnostics

The Diagnostics tab provides options to view log files and dashboard graphics.



The example shows the **Copies Done** rolling log.



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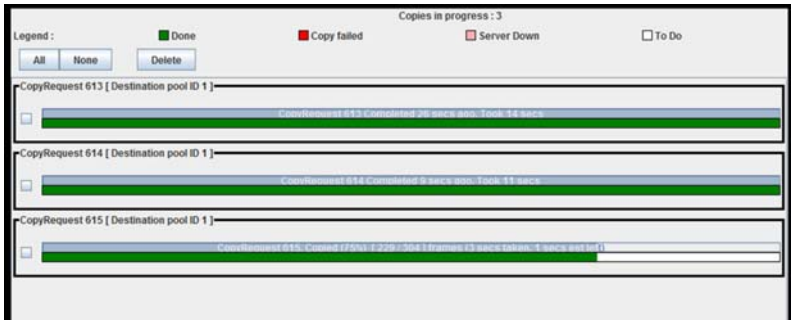
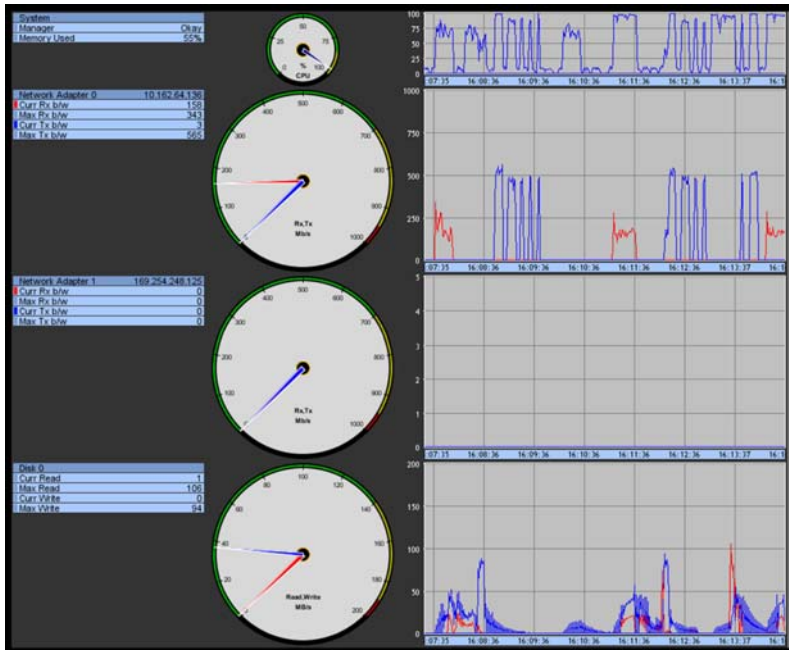
Select **Diagnostics – Dashboards – Copy dashboard** to displays the live progress of imports/exports performed in sQ Fileflow.



Selecting **Diagnostics – Dashboards – System dashboard** displays sQ Fileflow's history and live status, including CPU, network and disk activity displays in dashboard format, as in the following screen shot:



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6.1.6 Export from sQ Server Parameters

Allow existing file overwrite	Selecting this option enables the overwrite of any existing files with the same file name in the export destination.
Allow file to be read before completion	Select this to make the file readable before the export is complete.
Output Format	Select the output format from **MXF (SAM)** or **MXF (XDCAM)**. When **MXF (SAM)** is selected, there is an option to export an XML manifest of the clip.
Video Encoding	Select a video encoding format for output. If the **MXF (XDCAM)** output format is selected in **Output Format** and an XDCAM compatible format is selected in the **Video Encoding** drop-down, the **Audio Channels** and **Audio Bit Depth** drop-down settings are overridden (to ensure XDCAM compatibility). If an incompatible XDCAM format is selected in the **Output Format** drop-down, the transcode job fails.
Force SD Aspect	When importing SD media the aspect ratio can be forced to **4:3** or **16:9** (useful if archive media has its aspect incorrectly flagged). The default setting is **Off** which means the media's embedded aspect ratio is used. No transcoding is required to change the aspect ratio.
Audio Bit Depth	Select the audio bit depth (the number of bits of information per sample, directly corresponding to the resolution per sample). Select either **16** or **24**.
Audio Channels	Select the number of channels to export to (up to 16 channels).
Aspect Ratio Conversion	Use this option to select the way material displays by selecting **box** or **cut**. The **box** option resizes the image so the whole image fits within the window/output monitor. This results in black spaces (pillars) down the sides of the image. The **cut** option fills the whole window/output monitor with the image. This results in the vertical edges being 'cut' from the display.
Timecode Track	Select whether the MXF Timecode track is based on the source or the destination timecode.
Embedded Timecode	Choose whether the embedded timecode is based on the source or the destination timecode. Selecting **Source** preserves the original timecodes of an edited clip by storing the original source timecodes in each frame of the MXF video stream. Selecting **Destination** uses the destination timecode – which can only be a single timecode per clip. This increments the timecode in the video stream, ensuing a continuous timecode.
Closed Captions	Allows closed captions to be included in the export.
SAM Manifest	Select whether or not to exclude SAM Manifest.

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6.1.7 Import to sQ Server Parameters

SD Preferred	States the server's preferred Standard Definition format.
HD Preferred	States the server's preferred High Definition format.
Audio 4 Channel Preferred	States the server's preferred 4 channel configuration.
Audio 8 Channel Preferred	States the server's preferred 8 channel configuration.
Video Encoding	V**ideo Encoding** defaults to **Use Best Fit**. This setting can be overridden if required from the drop-down; only formats that the sQ Server can accept are listed.
Audio Encoding	**Audio Encoding** defaults to U**se Best Fit**. This setting can be overridden if required from the drop-down; only formats that the sQ Server can accept are listed.
Edge Browse Creation	The **Edge Browse Creation** option generates a low bit rate version of the clips on ingest. This process requires more CPU work to be done and therefore slows down the ingest but the ingest is available to all HBR & LBR Edit workstations when it is complete.
Use Embedded Metadata	**Use Embedded Metadata** can be switched to **Off** or **On** for import. When off, the values of title, owner and category are set respectively to the clip filename (without extension), machine name and product name (sQ Fileflow). When on, the values are read from an embedded QIA manifest if the imported file contains one; otherwise it uses the default values (i.e. the same as if switched off).
Aspect Ratio Conversion	Use this option to select the way material displays by selecting **box** or **cut**. The **box** option resizes the image so the whole image fits within the window /output monitor. This results in black spaces (pillars) down the sides of the image. The **cut** option fills the whole window/ output monitor with the image. This results in the vertical edges being 'cut' from the display.
Timecode Source	Select timecode source from embedded or MXF timecode track. A clip that has been exported with **Embedded Timecode** set to **Source**, can be imported back with the same timecode (that it was exported with) by setting **Timecode Source** to **Embedded** on import. If a clip is imported with **Timecode Source** set to **Timecode Track** there is only a single timecode; the sQ Edit increments this timecode automatically when it plays the clip and there are no edit points on the sQ Edit timeline.
Closed Captions	Allows closed captions to be included in the import.

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7. Workflows

7.1 Ingest

7.1.1 Automatic

1. A client copies (drops) one or more files into a target watch folder.
2. The Folder Watcher is monitoring the folder and creates an ingest job for each file in the sQ Fileflow Manager. The job contains the source file path and destination sQ Server zone and area.
3. The job status is initialised and the job is stored in the Fileflow Manager database.
4. An available sQ Fileflow Engine requests the next queued job from the Fileflow Manager and locks it so that no other Engines take the same job. It creates a Clip for the ingest in the ISA database.
5. The sQ Fileflow Engine begins the job, writing media essence to the sQ server and generating Browse if Edge Browse is configured on the Engine (and unless overridden by the preset).
6. Native I-frame formats pass straight through, if the format is configured as allowed on the server, while XDCAM HD and XAVC files are transcoded to the default standard set in the Engine.
7. The sQ Fileflow Manager reports File I/O status and Engine progress on the UI.

7.1.1.1 Notes

- From v5.3 All Folders must have the correct network permissions to enable the Engines to access them to save newly transcoded content, or to retrieve content for ingest.
- sQ Fileflow supports the Watch Folder workflow on either local or network drives. SAM recommend that network drives are used in normal operations as the storage on the Fileflow Manager PC is extremely limited and local disk access adversely affects performance of the system.
- Jobs can be deleted from the Fileflow Manager automatically, based on their status and elapsed time – e.g. “Completed” and after “1hour”. They can also be deleted manually by status or individually from the UI.
- Individual folders can have different media Profiles (e.g. target codec / Edge Browse creation) and attribute Presets (Default or appended Title, Owner Category) assigned to them.
- Media in the Watch Folders can be set to Delete on Complete (either immediately or after a configurable delay) via a configuration setting on the Engine. If not set, media must be manually deleted on a regular basis to prevent the folders running out of disc space.
- The destination sQ disk Pools are configured on the Engine from the available ISA Area tables.

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7.1.2 Manual

- Using the Queues' search, the user can find files in the source network location.
- The user triggers ingest of the files.
- A job is created for each file in the Fileflow Manager. The job contains the source file path and destination sQ Server address.
- The job status is initialised and the job is stored in the Fileflow Manager database.
- An available sQ Fileflow Engine requests the next queued job from the Fileflow Manager and locks it so that no other engines can take the same job. It creates a clip for the ingest in the ISA database.
- The sQ Fileflow Engine begins the job, writing media essence to the sQ server and Browse if Edge Browse is configured on the engine.
- Native I-frame formats pass straight through, if the format is configured as allowed on the server, while XDCAM HD and XAVC files are transcoded to the default standard set in the engine.
- The sQ Fileflow Manager reports file and engine progress on the Fileflow Manager UI. These two examples indicate the **Transfer Media – Watch Folders** process in the web interface.

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7.2 Export

7.2.1 Automatic

The Clip/ISA Listener monitors for clip property changes. The monitor must be enabled in the FFQ configuration and appropriate rules must be set to specify monitored properties, trigger values and actions to be performed on trigger detection.

- A user defined metadata tag is set in the properties of a clip. (or a clip with a monitored tag is edited hence triggering an export event)
- The Clip/ISA Listener detects the property change (or the editing of a clip with a monitored property), triggering the creation of a job with the Clip ID and target folder location. Please see the Appendix for the available triggers
- The job is added to the queue and the status is updated
- The engine takes the job and reads the metadata and essence
- An MXF file is then written - transcoded if required - to create a file in the target folder

7.2.1.1 Notes

- All Folders must have the correct network permissions to enable the Engines to access them to save newly transcoded content, or to retrieve content for ingest.
- Adding multiple tags to a clip triggers multiple exports to different profiled / preset folders, for example:
  - Tag ‘TX’ – export as Native DVCProHD, and append TX to title
  - Tag ‘Archive’ – export as XDCAM HD and append Archive Copy to title

7.2.2 Manual or API Export

The Queue UI or custom application uses the Search Service to find the required clip and creates a Job in the Queue.

- Status feedback is made available to the custom application
- The Engine takes the Job and reads ISA metadata and essence from the sQ Server zone and area
- If required the essence is transcoded to match the default or selected Preset settings or profile
- The file is written to the target folder on the network and the job’s status is updated

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